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John W. Hancock Professor of Engineering, IEEE Fellow  
Professor, Department of Computer Science  
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## Employment History

**John W. Hancock Professor in Engineering**, Virginia Tech, Aug. 2019–present  
**Professor**, Department of Computer Science, Virginia Tech, Aug. 2019–present  
**Professor (by courtesy)**, Department of Electrical and Computer Engineering, Virginia Tech, Aug. 2020–present  
**Associate Director**, Stacks@CS Center for Computer Systems Research, Virginia Tech, Aug. 2022–present  
**Honorary Professor**, School of Electronics, Electrical Engineering and Computer Science, Queen's University Belfast, Aug. 2022–present  
**Director**, Queen's University Belfast Research Institute in Electronics, Communications and Information Technology (ECIT), Jan. 2018–Aug. 2019  
**Head of School**, School of Electronics, Electrical Engineering and Computer Science, Queen's University Belfast, Jan. 2016–Jan. 2018  
**Royal Society Wolfson Research Fellow**, Queen's University Belfast, Sep. 2015–present  
**Professor & Chair in High Performance and Distributed Computing**, School of Electronics, Electrical Engineering and Computer Science, Queen's University Belfast, Jan. 2012–Aug. 2019  
**Director**, Center for Data Science and Scalable Computing, Queen's University Belfast, Feb. 2016–Aug. 2019  
**Director**, High Performance and Distributed Computing Research Cluster, Queen's University Belfast, January 2012–February 2016  
**Adjunct Professor**, Department of Computer Science, Virginia Tech, Oct. 2016–Aug. 2019  
**Adjunct Professor**, Department of Computer Science, Old Dominion University, Oct. 2013–present  
**Associate Professor with Tenure**, Department of Computer Science, University of Crete, Sep. 2009–Jan. 2012  
**Affiliate Professor**, Institute of Computer Science Foundation for Research and Technology (FORTH), September 2009–Jan. 2012  
**Associate Professor with Tenure**, Department of Computer Science, Virginia Tech, Aug. 2008–Sep. 2009  
**Associate Professor Tenure-Track**, Department of Computer Science, Virginia Tech, Aug. 2006–Aug. 2008  
**Assistant Professor Tenure-Track**, Department of Computer Science, College of William & Mary, Aug. 2002–Aug. 2006  
**Visiting Assistant Professor**, Department of Electrical and Computer Engineering, University of Illinois, Urbana-Champaign Jan. 2001–Aug. 2002

## Earned Degrees

Ph.D.	Computer Engineering and Informatics, University of Patras, 2000
Master's in Engineering	Computer Engineering and Informatics, University of Patras, 1997
Diploma in Engineering <sup>1</sup>	Computer Engineering and Informatics, University of Patras, 1996
<sup>1</sup> A Diploma in Engineering in Greece is a 5-year University degree that is academically equivalent to a qualification above the Bachelor's and below the Master's degree in the US.	

## Primary Research Areas

High Performance Computing and Computational Science; Computer Systems

## Current Technical Research Interests

- **Efficient, resilient AI systems across the computing continuum:** federated learning, edge/microcloud infrastructure, and runtime/orchestration that make AI robust under heterogeneity and failures.
- **Performance engineering for modern accelerators:** GPU/CPU overlap, memory/KV-cache redesign, long-context inference/training efficiency, and cost/energy-aware optimization.
- **Systems for real-world, data-intensive science and cyberinfrastructure:** streaming + learning pipelines, scalable experimentation/digital twins, and deployable research platforms with measurable impact.

## Honors and Awards

- [44] **Sigma Xi Full Member**, The Scientific Research Honor Society, 2025
- [43] **IEEE Fellow**, "For contributions to dynamic execution environments and multiprocessor memory management", 2024
- [42] **IEEE Computer Society Distinguished Visitor**, 2024
- [41] **Fellow, International Artificial Intelligence Industry Alliance**, 2024
- [40] **Fellow, Asia-Pacific Artificial Intelligence Association**, 2023
- [39] **Distinguished Contributor, IEEE Computer Society**, 2021
- [38] **Best Paper Award**, Design Automation and Test in Europe Conference (DATE), 2020
- [37] **IEEE Award for Editorial Excellence, IEEE Transactions on Parallel and Distributed Systems**, 2020
- [36] **John W. Hancock Chair in Engineering**, Virginia Tech, 2019–present
- [35] **Elsevier Distinguished Editorial Service Award**, 2019

- [34] **Distinguished Member of the ACM**, 2018
- [33] **IEEE Outstanding Service Award**, 2018
- [32] **Fellow of the IET**, 2017
- [31] **Investors in People Silver Award**, 2017
- [30] **Royal Society Wolfson Research Merit Award**, 2015 (extended to lifetime)
- [29] **SFI-DEL Investigator Award**, 2015
- [28] **Fellow of the British Computer Society**, 2014
- [27] **IEEE Outstanding Service Award**, 2014
- [26] **ACM Senior Member**, 2011
- [25] **IEEE Senior Member**, 2010
- [24] **IEEE Outstanding Service Award**, 2010
- [23] **IBM Faculty Award**, 2007
- [22] **DOE Early Career Principal Investigator Award**, 2005
- [21] **NSF CAREER Award**, 2004
- [20] **Marie Curie Fellow**, 2009
- [19] **HiPEAC Fellow**, 2008
- [18] **HiPEAC Paper Award**, twice in 2020 (for ASPLOS'2020 and MICRO'2020 papers)
- [17] **Best Paper Award**, Design Automation and Test in Europe Conference (DATE), 2020
- [16] **Best Paper Award**, ACM International Workshop on Code Optimization for Multi and Many Cores (COSMIC), 2013
- [15] **Best Paper Award**, ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPOPP), 2007
- [14] **Best Paper Nomination**, ACM Symposium on High-Performance Parallel and Distributed Computing (HPDC), 2006
- [13] **Best Paper Award**, International Workshop on OpenMP (IWOMP), 2005
- [12] **Best Paper Award**, International Symposium on High-Performance Computing (ISHPC),

2003

- [11] **Best Paper Award**, IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGRID), 2002
- [10] **Best Paper Award**, IEEE/ACM International Parallel and Distributed Processing Symposium (IPDPS), 2002
- [9] **Best Paper Award**, IEEE/ACM Supercomputing: High-Performance Computing, Networking, Storage and Analysis Conference (SC), 2000
- [8] **Best Paper Award Nomination**, ACM International Conference on Supercomputing (ICS), 2001
- [7] **Best Paper Award Nomination**, IEEE/ACM Supercomputing: High-Performance Computing, Networking, Storage, and Analysis Conference (SC), 2001
- [6] **Best Paper Award Nomination**, IEEE/ACM International Symposium on Microarchitecture (MICRO), 2020
- [5] **Best Paper Award Nomination**, International Conference on Parallel Processing (ICPP), 2010
- [4] **Best Paper Award Nomination**, ACM International Conference on Supercomputing (ICS), 1999
- [3] **Outstanding Academic Performance Award**, Technical Chamber of Greece, 1996
- [2] **Outstanding Academic Performance Award**, Technical Chamber of Greece, 1993
- [1] **Outstanding Academic Performance Award**, National Scholarships Foundation of Greece, 1992

## Publications

### Refereed Publications

#### Journal Articles

- [276] A. Kumar, C. O'Mahoney, P. K. Werle, S. Shanker, D. S. Nikolopoulos, B. Ji, H. Vandieren-donck, and D. John, "Marvel: An end-to-end framework for generating model-class aware custom risc-v extensions for lightweight ai," *IEEE Open Journal of Circuits and Systems*, vol. 6, pp. 445–456, 2025.
- [275] M. J. Abdel-Rhaman, E. Mazied, H. Fahid, T. Kory, A. McKenzie, S. Midkiff, K. Cardoso, and D. S. Nikolopoulos, "On robust optimal joint deployment and assignment of ran intelligent controllers in o-rans," *IEEE Open Journal of the Communications Society*, vol. 5, pp. 2358–2376, Jan. 2024. doi: [10.1109/OJCOMS.2024.3383607](https://doi.org/10.1109/OJCOMS.2024.3383607).

- [274] E. A. Mazied, D. S. Nikolopoulos, Y. Hanafy, and S. F. Midkiff, "Auto-scaling edge cloud for network slicing," *Frontiers in High Performance Computing*, vol. 1, 2023. doi: <https://doi.org/10.3389/fhpcp.2023.1167162>.
- [273] C.-H. Hong, M. Lee, H. Ahn, and D. S. Nikolopoulos, "Gshare: A centralized gpu memory management framework to enable gpu memory sharing for containers," *Future Generation Computer Systems*, vol. 130, pp. 181–192, May 2022.
- [272] K. Dichev, D. di Sensi, I. Spence, K. W. Cameron, and D. S. Nikolopoulos, "Power log'n'roll: Power-efficient localized rollback for mpi applications using logging protocols," *IEEE Transactions on Parallel and Distributed Systems*, vol. 33, no. 6, pp. 1276–1288, Jun. 2022.
- [271] U. Minhas, R. Woods, D. S. Nikolopoulos, and G. Karakonstantis, "Efficient, dynamic multi-task execution on fpga-based computing systems," *IEEE Transactions on Parallel and Distributed Systems*, vol. 33, no. 3, pp. 710–722, Mar. 2022.
- [270] L. Mukhanov, K. Tovletoglou, H. Vandierendonck, D. S. Nikolopoulos, and G. Karakonstantis, "Revealing dram operating guardbands through workload-aware error predictive modeling," *IEEE Transactions on Computers*, no. 11, pp. 1976–1987, Nov. 2021.
- [269] J. Lee, H. Vandierendonck, and D. S. Nikolopoulos, "Mixed precision kernel recursive least squares," *IEEE Transactions on Neural Networks and Learning Systems*, no. 3, pp. 1284–1298, Mar. 2022. doi: <10.1109/TNNLS.2020.3041677>.
- [268] J. Sun, H. Vandierendonck, and D. S. Nikolopoulos, "Fast load balance parallel graph analytics with an automatic data structure selection algorithm," *Future Generation Computer Systems*, vol. 112, pp. 612–623, Nov. 2020.
- [267] J. Lee, G. T. Peterson, H. Vandierendonck, and D. S. Nikolopoulos, "Air: Iterative refinement acceleration using arbitrary dynamic precision," *Parallel Computing*, vol. 97, Sep. 2020, Article: 102663.
- [266] N. Wang, B. Varghese, M. Matthaiou, and D. S. Nikolopoulos, "Dyverse: Dynamic vertical scaling in multi-tenant edge environments," *Future Generation Computer Systems*, vol. 108, pp. 598–612, Jul. 2020.
- [265] H. Vandierendonck and D. S. Nikolopoulos, "Hyperqueues: Design and Implementation of Deterministic Concurrent Queues," *ACM Transactions on Parallel Computing*, vol. 6, no. 4, pp. 1–35, Nov. 2019, Article 23.
- [264] A. Hassan, H. Vandierendonck, and D. S. Nikolopoulos, "Fast and Energy-Efficient OLAP Data Management on Hybrid Main Memory Systems," *IEEE Transactions on Computers*, vol. 63, no. 11, pp. 1597–1611, Nov. 2019.
- [263] I. Tsikokas, L. Mukhanov, D. S. Nikolopoulos, and G. Karakonstantis, "Significance-Driven Data Truncation for Preventing Timing Failures," *IEEE Transactions on Device and Materials Reliability*, vol. 19, no. 1, pp. 25–36, Mar. 2019.
- [262] K. Tovletoglou, L. Mukhanov, D. S. Nikolopoulos, and G. Karakonstantis, "Shimmer: Implementing a Heterogeneous-Reliability DRAM Framework on a Commodity Server," *IEEE Computer Architecture Letters*, vol. 18, no. 1, pp. 26–29, Jun. 2019. doi: <10.1109/LCA.2019.2893189>.
- [261] U. Minhas, M. Russell, S. Kaloutsakis, P. Barber, R. Woods, G. Georgakoudis, C. Gillan, and D. S. Nikolopoulos, "NanoStreams: A Microserver Architecture for Real-Time Analytics on Fast Data Streams," *IEEE Transactions on MultiScale Computing Systems*, vol. 4, no. 3, pp. 396–409, 2018.

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- [256] C. Chalios, G. Georgakoudis, K. Tovletoglou, G. Karakonstantis, H. Vandierendonck, and D. S. Nikolopoulos, "DARE: Data Access Aware Refresh via Spatio-Temporal Application Resilience on Commodity Servers," *International Journal of High Performance Computing Applications*, vol. 32, no. 1, pp. 74–88, 2018. doi: [10.1177/1094342017718612](https://doi.org/10.1177/1094342017718612). [Online]. Available: <http://journals.sagepub.com/doi/10.1177/1094342017718612>.
- [255] G. Karakonstantis, D. S. Nikolopoulos, D. Gizopoulos, P. Trancoso, Y. Sazeides, C. D. Antonopoulos, S. Venugopal, and S. Das, "Error-Resilient Server Ecosystems for Edge and Cloud Datacenters," *IEEE Computer*, vol. 50, no. 12, pp. 78–82, Dec. 2017.
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- [252] N. Wang, B. Varghese, M. Matthaiou, and D. S. Nikolopoulos, "ENORM: A Framework For Edge NODe Resource Management," *IEEE Transactions on Services Computing*, vol. 13, no. 6, pp. 1086–1099, 2020.
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- [244] C. Chalios, S. Catalán, E. S. Quintana-Orti, and D. S. Nikolopoulos, "Evaluating Asymmetric Multicore Systems-on-Chip and the Cost of Fault Tolerance using Iso-Metrics," *IET Computers & Digital Techniques*, vol. 10, no. 2, pp. 85–92, Feb. 2016.
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- [235] S. Lyberis, G. Kalokerinos, M. Lygerakis, I. Mavroidis, V. Papaefstathiou, M. Katevenis, D. Pnevmatikatos, and D. S. Nikolopoulos, "FPGA Prototyping of Emerging Manycore Architectures for Parallel Programming Research using Formic Boards," *Journal of Systems Architecture*, vol. 60, no. 6, pp. 481–493, Jun. 2014.
- [234] H. Vandierendonck, G. Tzenakis, and D. S. Nikolopoulos, "Analysis of Dependence Tracking Algorithms for Task Dataflow Execution," *ACM Transactions on Architecture and Code Optimization*, vol. 10, no. 4, pp. 1–24, Dec. 2013, Article No. 61.
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## Papers in Archival Conference Proceedings

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## Keynote Talks Invited

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- [59] D. S. Nikolopoulos, "Energy Efficient Computing using Computational Significance Abstractions," in *UK-China Workshop on Shaping Low Carbon Energy Future*, Keynote talk, Belfast, UK, Aug. 2016.

- [58] D. S. Nikolopoulos, "Using Computational Significance and Resilience in System Software Stacks," in *First Workshop on Energy-Aware High Performance Computing*, Keynote talk. Held in conjunction with the 2016 International Supercomputing Conference (ISC), Frankfurt, Germany, Jun. 2016.
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- [56] D. S. Nikolopoulos, "Programming the Energy Efficiency of HPC Systems," in *Proceedings of the 4th International Conference on Energy-Aware High Performance Computing, Keynote Talk*, Dresden, Germany, Sep. 2013.
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- [54] D. S. Nikolopoulos, "To Program or not to Program the Memory Hierarchy?" In *Fourth Workshop on Programmability Issues for Heterogeneous Multicores (MULTIPROG), Keynote Address*, Heraklion, Greece, Jan. 2011.
- [53] D. S. Nikolopoulos, "Facing the Challenges of Multicore Processor Technologies using Autonomic System Software," in *Proceedings of the 7th Workshop on Parallel and Distributed Scientific and Engineering Computing with Applications (PDSEC)*, Held in conjunction with the 20th IEEE International Parallel and Distributed Processing Symposium (IPDPS), 1pp., **Keynote Address**, Rhodes, Greece, Apr. 2006.

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- [51] D. S. Nikolopoulos, "NanoStreams: A Hardware and Software Stack for Real-Time Analytics on Fast Data Streams," *HiPEAC Info*, no. 38, pp. 15–16, May 2014.
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- [48] M. Duranton et al., "Computing Systems: Research Challenges Ahead: The HiPEAC Vision 2011/2012," Tech. Rep., 2011.
- [47] J. Kesapides, D. S. Nikolopoulos, and A. Bilas, "ADAM: Automatic Dependence Analysis & Monitoring," in *Proceedings of the Sixth International Summer School on Advanced Computer Architecture and Compilation for Embedded Systems (ACACES)*, 4pp, Barcelona, Spain, Jul. 2010.

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- [45] D. S. Nikolopoulos and M. Katevenis, "Processors: The Challenge of Cooperation," *Economist*, no. 71, Dec. 2009, In Greek.
- [44] M. Alvanos, G. Tzenakis, D. S. Nikolopoulos, and A. Bilas, "Parallelization and Performance of an H.264 Video Encoder on the Cell B.E.," in *Proceedings of the Fifth International Summer School on Advanced Computer Architecture and Compilation for Embedded Systems (ACACES)*, 4pp, Barcelona, Spain, Jul. 2009.
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## Technical Reports

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## Theses

- [2] D. S. Nikolopoulos, "System Software Support for Reducing Memory Latency on CC-NUMA Architectures," PhD Dissertation, Department of Computer Engineering and Informatics, University of Patras, Dec. 2000.
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## Publication Metrics

### Citation metrics

Source	citations	h-index
Google Scholar	7748	42
Semantic Scholar	5388	37
Scopus	4069	30
Top 2% of Computer Scientists Worldwide according to <a href="#">Scopus Standardized Citation Indicators</a>		

## Research Grants

Total amount of research awards led as Principal Investigator: **\$36.5 million**  
as CoInvestigator: **\$67.26 million**

- [54] **Cloud–Edge–Neuromorphic Computing Integration for Multimodal Sensing and AI-Driven Modeling of Complex Biological Systems.** Sponsor: Virginia Tech Virginia Tech Institute for Critical Technology and Applied Science-Virginia Tech Institute for Advanced Computing. Role: CoI. Grant amount: \$12,500 (CoI Share), \$50,000 (total) Dates of activity: 10/2025–10/2026.
- [53] **Advancing AI-Driven Autonomous Experimentation for Turbulent Flows.** Sponsor: Virginia Tech College of Engineering Major Grant Initiative Program. Role: PI. Grant amount: \$50,000 Dates of activity: 08/2025–08/2026.

- [52] **GPU-Accelerated High-Performance Computing to Supercharge AI Models for Pandemic Prevention.** Sponsor: National Science Foundation (National AI Resource). Role: Co-PI. Grant amount: N/A (HPC resource allocation) Dates of activity: 05/22/2024–11/22/2024
- [51] **SWEET: Hardware and Software for Sustainable Wearable Edge Intelligence.** Sponsor: National Science Foundation. Grant ID: 2315851 Role: PI. Grant amount: \$600,000 Dates of activity: 10/01/2023–09/30/2026.
- [50] **WASML: Enabling Scalable Serverless Computer Vision.** Sponsor: Sony Faculty Innovation Award Grant ID: VTF-AG3ZURVF Role: PI. Grant amount: \$100,000 Dates of activity: 08/01/2023–07/31/2024.
- [49] **VirtEdgeAI: Seamless Virtualization of AI Accelerators in Edge Computing Substrates.** Sponsor: CISCO Grant ID: VTF-446663 Role: PI. Grant amount: \$100,000. Dates of activity 02/01/2022–01/31/2023.
- [48] **Collaborative Research: CNS Core: Medium: HardLambda: A new FaaS Abstraction for Cross-Stack Resource Management in Disaggregated Datacenters.** Sponsor: National Science Foundation. Grant ID: 2106634. Role: CoI. Grant amount: \$600,000. CoI grant share: \$210,000. Dates of activity: 06/01/2021–05/31/2024.
- [47] **Belfast Region City Deal, Queen's Global Innovation Institute.** Sponsor: UK Treasury, 77%, Belfast City Council 23%. Role: PI. Grant amount: £56,000,000. CoI grant share: £15,000,000. Dates of activity: 01/2019–12/2018.
- [46] **Biohaviour: Building the Blind Watchmaker.** Sponsor: EPSRC. Grant ID: EP/R003564/1. Role: CoI. Grant amount: £778,226. CoI grant share: £194,556. Dates of activity: 01/2018–06/2021.
- [45] **Variability in Computing Systems.** Sponsor: Royal Academy of Engineering, Distinguished Visiting Fellowships. Role: Host PI (Kirk Cameron, Visiting Fellow). Grant amount: £4,100. Dates of activity 8/2017–7/2018.
- [44] **Scalable, Virtualized Data Center Acceleration.** Sponsor: Intel. Role: CoI. Grant amount: £3,945. CoI grant share: £795. Dates of activity: 1/2017—12/2020.
- [43] **OPRECOMP: Open Transprecision Computing.** Sponsor: EU, Horizon 2020. Grant ID: H2020-732631. Role: PI. Grant amount: €5,999,510 (£5,091,933). QUB and PI grant share: €705,625 (£599,781). Dates of activity: 1/2017—12/2020.
- [42] **UNISERVER: A Universal Micro-server Ecosystem by Exceeding the Energy and Performance Scaling Boundaries.** Sponsor: EU, Horizon 2020. Grant ID: H2020-688540. Role: CoI. Grant amount: €4,815,810 (£4,333,717). QUB and PI grant share: €322,648 (£222,516). Dates of activity 2/2016–1/2019.
- [41] **VINEYARD: Versatile Integrated Accelerator-based Heterogeneous Datacenters.** Sponsor: EU, Horizon 2020. Grant ID: H2020-687628. Role: PI. Grant amount: €6,283,895 (£4,467,972). QUB and PI grant share: €663,625 (£471,850). Dates of activity 2/2016–1/2019.
- [40] **Principles and Practice of Near Data Computing.** Sponsor: Royal Society Wolfson Research Merit Award. Grant ID: WM150009. Role: PI. Grant amount and QUB grant share: £50,000. Dates of activity 10/2015–9/2020.

- [39] **Meeting the Future Challenges of Heterogeneous and Extreme Scale Parallel Computing.** Sponsor: SFI-DEL, Investigator Awards. Grant ID: 14/IA/2474. Role: PI. Grant amount and QUB grant share: £521,947. Dates of activity 9/2015–9/2018.
- [38] **ECOSCALE: Energy Efficient Heterogeneous Computing at Exascale.** Sponsor: EU, Horizon 2020. Grant ID: H2020-671632. Role: PI. Grant amount: €4,237,398 (£2,922,346). QUB and PI grant share: €696,750 (£480,518). Dates of activity: 10/2015–10/2018.
- [37] **ALLScale: An Exascale Programming, Multi-objective Optimization and Resilience Management Environment Based on Nested Recursive Parallelism.** Sponsor: EU, Horizon 2020. Grant ID: H2020-671603. Role: PI. Grant amount: €3,366,196 (£2,463,217). QUB and PI grant share: €438,578 (£320,930). Dates of activity 10/2015–10/2018.
- [36] **Crevinn Teoranta OpenCL Knowledge Transfer** Sponsor: Knowledge Transfer Partnership / Intertrade Ireland Fusion Project Grant ID: Role: PI. Grant amount: £39,000. Dates of activity 08/2015–09/2017
- [35] **SERT: Scale-Free, Energy-Efficient and Resilient CSE Software for Mega-Core Systems.** Sponsor: EPSRC (Software for the Future II). Grant ID: EP/M01147X/1. Role: PI. Grant amount: £963,929. QUB and PI grant share: £694,909. Dates of activity 3/2015–3/2018.
- [34] **RAPID: Heterogeneous Secure Multi-level Remote Acceleration Service for Low-Power Integrated Systems and Devices.** Sponsor: EU, Horizon 2020. Grant ID: H2020-644312. Role: PI. Grant amount: €2,203,800 (£1,695,231). QUB and PI grant share: €326,925 (£251,481). Dates of activity 01/2015–01/2018.
- [33] **DIVIDEND: Distributed Heterogeneous Vertically Integrated Energy Efficient Data Centers.** Sponsor: EPSRC, CHIST-ERA. Grant ID: EP/M015742/1. Role: PI. Grant amount: €1,346,885 (£1,077,508). QUB and PI grant share: €279,646 (£223,717). Dates of activity 01/2015–01/2018.
- [32] **HPDCJ: Heterogeneous Parallel and Distributed Computing with Java.** Sponsor: EPSRC, CHIST-ERA. Grant ID: EP/M015750/1 Role: PI. Grant amount: €1,721,010 (£1,376,808). QUB and PI grant share: €178,159 (£142,527). Dates of activity 10/2014–10/2017.
- [31] **ASAP: An Adaptive, Highly Scalable Analytics Platform** Sponsor: European Commission, FP7-ICT. Grant ID: FP7-619706. Role: Co-PI. Grant amount: €2,245,128 (£1,909,122). QUB grant share: €407,720 (£346,701). Co-PI grant share: €183,548 (£156,078). Dates of activity: 3/2014–3/2017.
- [30] **US-Ireland R&D Partnership Planning Grant: Cloud-based Electronic Integration of Patient Records (CLEAR)** Grant ID: PG20 Role: PI Grant amount: £1,356 QUB grant share: £1,356. PI grant share: £1,356. Dates of activity: 1/2014–2/2014.
- [29] **ENPOWER: Energy-Proportional Computing with Heterogeneous and Reconfigurable Processors** Sponsor: EPSRC. Grant ID: EP/L004232/1. Role: PI. Grant amount: £741,043. QUB grant share: £348,325. PI grant share: £174,163. Dates of activity: 10/2013–10/2016.
- [28] **ALEA: Abstraction-Level Energy Accounting and Optimization in Many-Core Programming Languages** Sponsor: EPSRC, System Approaches to Distributed and Embedded Architectures. Grant ID: EP/L000555/1. Role: Coordinator & PI. Grant amount: £669,561. QUB grant share: £394,025. PI grant share: £359,377. Dates of activity: 9/2013–9/2016.

- [27] **NanoStreams: A Hardware and Software Stack for Real-Time Analytics on Fast Data Streams.** Sponsor: European Commission, FP7-ICT, Objective 3.4 Advanced Computing, Embedded and Control Systems. Grant ID: FP7-610509. Role: Coordinator & PI. Grant amount: €3,300,000. QUB grant share: €723,565. PI grant share: €470,317. Dates of activity: 9/2013–9/2016.
- [26] **CACTOS: Context-Aware Cloud Topology Optimization and Simulation.** Sponsor: European Commission, FP7-ICT, Objective 1.2: Software Engineering, Services and Cloud Computing. Grant ID: FP7-610811. Role: PI. Grant amount: €3,215,751. QUB grant share: €583,330. PI grant share: €243,600. Dates of activity: 10/2013–10/2016.
- [25] **SAP: PhD Project on High Availability for Petascale Systems.** Sponsor: SAP AG. Grant ID: UK-2013-009. Role: PI. Grant amount: £12,436. QUB grant share: £12,436. PI grant share: £12,436. Dates of activity: 08/2013–08/2019.
- [24] **SCORPIO: Significance-Based Computing for Reliability and Power Optimization.** Sponsor: European Commission, FP7-FET-Open. Grant ID: FP7-323872. Role: PI. QUB Grant amount: €1,890,775. QUB and PI grant share: €273,400. Dates of activity: 06/2013–06/2016.
- [23] **NovoSoft: Software Management of Non-Volatile Memory Hierarchies.** Sponsor: European Commission, Marie Curie Intra-European Fellowship. Grant ID: FP7-327744. Role: Scientist in Charge (Hans Vandierendonck, PI and ERC Marie Curie Fellow). Grant amount: €309,235. Dates of activity: 04/2013–04/2015.
- [22] **Characterizing and Optimizing In-Memory Database Systems for Emerging Memory Technologies.** Sponsor: SAP UK Limited. Grant ID: R502. Role: Co-PI with Hans Vandierendonck, PI. Grant amount: £34,298. Co-PI grant share: £17,149. Dates of activity: 03/2013–03/2016.
- [21] **GEMSCLAIM: Greener Mobile Systems by Cross Layer Integrated Energy Management.** Sponsor: EPSRC, CHIST-ERA. Grant ID: EP/K017594/1. Role: PI. Grant amount: €1,776,688. QUB and PI grant share: €436,884. Dates of activity: 09/2012–09/2015.
- [20] **Exascale Mesh Generation Runtime Systems.** Sponsor: Royal Academy of Engineering, Distinguished Visiting Fellowships. Role: Host PI (Nikos Chrisochoides, Visiting Fellow). Grant amount: £4,100. Dates of activity: 11/2012–06/2013.
- [19] **HOLISTIC: Hardware and Software Techniques for Multicore Processor Architectures Reliability Enhancement.** Sponsor: Greek Ministry of Education, Lifelong Learning and Religious Affairs, Thales Programme, grant ID: 1103. Role: PI with Manolis Katevenis (co-PI). Grant amount: €600,000. FORTH-ICS and PI grant share: €98,000. Dates of activity: 01/2012–01/2016.
- [18] **SCC–MR: Scalable and Energy-Efficient Runtime Support for the MapReduce Programming Model on the Intel SCC.** Sponsor: Intel Corporation. Equipment Donation. Role: PI. Dates of activity: 03/2010–03/2012.
- [17] **TEXT: Towards Exascale Applications.** Sponsor: European Commission, FP7-INFRASTRUCTURES Programme. Grant ID: ICT-261580. Role: PI. Grant amount: €2,470,000. FORTH-ICS and PI grant share: €299,364. Dates of activity: 06/2010–09/2012.

- [16] **ReMap: Rearchitecting MapReduce for Multicore Systems with Explicit Communication.** Sponsor: High Performance and Embedded Architectures and Compilers Network of Excellence, Cluster Collaboration Grant. Grant ID: ICT-217068. Role: PI with Eduard Ayguadé co-PI. FORTH-ICS and PI grant share: €3,000. Dates of activity: 06/2010–06/2011.
- [15] **ENCORE: Enabling Technologies for a Programmable Many-core.** Sponsor: European Commission, FP7-ICT, Objective 3.4: Advanced Computing, Embedded and Control Systems. Grant ID: ICT-248647. Role: co-PI with Manolis Katevenis (PI). Grant amount: €2,533,000. FORTH-ICS grant share: €533,000. Co-PI grant share: €266,500. Dates of activity: 03/2010–03/2013.
- [14] **Coupled Models of Diffusion and Individual Behavior over Extremely Large Scale Social Networks.** Sponsor: NSF OCI PetaApps Program. Grant ID: OCI-0904844. Role: co-PI with Madhav Marathe (PI), Keith Bisset, and Xizhou Feng (co-PIs). Grant amount: \$1,182,798. Co-PI grant share: \$200,000. Dates of activity: 08/2009–08/2013.
- [13] **I-Cores: Hypervisor-based Synthesis of Custom Execution Environments for Multi-core Systems.** Sponsor: European Commission, FP7 Programme, Marie Curie International Reintegration Grants. Grant ID: IRG-224759. Role: PI. Grant amount: €100,000. Dates of activity: 01/2009–01/2013.
- [12] **HiPEAC Fellowship: Runtime Systems for Parallel Programming.** Sponsor: European Commission, FP7 Programme, European Network of Excellence in High Performance and Embedded Architectures. Grant ID: ICT-217068. Role PI, hosted by Manolis Katevenis. FORTH-ICS and PI share: €8,600. Dates of activity: 01/2008–02/2008.
- [11] **VT-ASOS: Virtualization Technologies for Application-Specific Operating Systems on Many-Core HPC Systems.** Sponsor: NSF Computer Systems Research Program. Grant ID: CNS-0720673. Role: PI, with Godmar Back (Co-PI). Grant amount: \$300,000. PI grant share: \$150,000. Dates of activity: 07/2007–07/2010.
- [10] **Thermal Conductors: Runtime Software Support for Proactive Heat Management in Advanced Execution Systems.** Sponsor: NSF Computer Systems Research Program. Grant ID: CNS-0720750. Role: co-PI with Kirk W. Cameron (PI). Grant amount: \$350,000. Co-PI grant share: \$175,000. Dates of activity: 07/2007–07/2010.
- [9] **Models and Adaptive Runtime Systems for Accessible Parallel Programming on IBM Multi-Core Systems.** Sponsor: IBM Faculty Award Program, Grant ID: VTF-874197. Role: PI. Grant amount: \$15,000. Dates of activity: 05/2007–05/2008.
- [8] **MISER: A High-Performance, Power-Aware Cluster.** Sponsor: NSF Computing Research Infrastructure Program. Grant ID: CNS-0709025. Role: co-PI with Kirk W. Cameron (PI) and Adrian Sandu (Co-PI). Grant amount: \$500,000. Co-PI grant share: \$166,667. Dates of activity: 07/2007–07/2008.
- [7] **Faculty Startup Grant.** Sponsor: Virginia Tech. Role: PI. Grant amount: \$100,000. Dates of activity: 08/2006–08/2007.
- [6] **MELISSES: Liquid Services for Scalable Multithreaded and Multicore Execution on Emerging Supercomputers.** Sponsor: DOE Early Career Principal Investigator Award Program. Grant ID: DE-FG02-06ER25751, DE-FG02-05ER25689. Role: PI. Grant amount: \$299,907. Dates of activity: 08/2005–08/2008.

- [5] **Acquisition of STEMS: A Laboratory for End-to-End Development of Software and Tools for Emerging Multigrain Supercomputers.** Sponsor: NSF Major Research Instrumentation Program. Grant ID: CNS-0521381. Role: PI with Nikos Chrisochoides (co-PI) and Bruce Lowekamp (co-PI). Grant amount: \$228,134. PI grant share: \$76,045. Dates of activity: 05/2005–05/2008.
- [4] **A Unified Framework for Multilevel Parallelization on Deep Computing Systems.** Sponsor: NSF Research Experiences for Undergraduates Program. Grant ID: CCF-0531887. Role: PI. Grant amount: \$6,000. Dates of activity: 05/2005–08/2005.
- [3] **A Unified Framework for Multilevel Parallelization on Deep Computing Systems.** Sponsor: NSF CAREER Award Program. Grant ID: CCF-0346867, CCF-0715051. Role: PI. Grant amount: \$419,835. Dates of activity: 01/2004–01/2009.
- [2] **An Application-Driven Approach for Runtime Scheduling of Multigrain Adaptive Computations.** Sponsor: NSF ITR Program. Grant ID: ACI-0312980. Role: co-PI with Nikos Chrisochoides (PI). Grant amount: \$450,000. Co-PI grant share: \$225,000. Dates of activity: 09/2003–09/2006.
- [1] **Faculty Startup Grant.** Sponsor: College of William and Mary. Role: PI. Grant amount: \$100,000. Dates of activity: 08/2002–08/2004.

## Education

### Courses Taught

- [43] Spring'26 CS2506: Computer Organization II, Virginia Tech (Teaching Effectiveness: , Class Size 200)
- [42] Spring'25 CS5914: Special Topics in Computer Science: LLMs for High-Performance Code Generation, Virginia Tech (Teaching Effectiveness: 5.70/6.00, Class Size 20)
- [41] Fall'24 CS2506: Computer Organization II, Virginia Tech (Teaching Effectiveness: 4.90/6.00, Class Size 195)
- [40] Spring'24 CS2506: Computer Organization II, Virginia Tech (Teaching Effectiveness: 5.10/6.00, Class Size 150)
- [39] Fall'23 CS5510/ECE5510: Multiprocessor Programming, Virginia Tech (Teaching Effectiveness: N/A, Class Size 45)
- [38] Spring'23 CS2506: Computer Organization II, Virginia Tech (Teaching Effectiveness: 4.87/6.00, Class Size 192)
- [37] Fall'22 CS5914: Warehouse Scale Computing, Virginia Tech (Teaching Effectiveness: 5.79/6.00, Class Size 17)
- [36] Spring'22 CS2506: Computer Organization II, Virginia Tech (Teaching Effectiveness: 5.16/6.00, Class Size 216)

- [35] Fall'21 CS5510/ECE5510: Multiprocessor Programming, Virginia Tech (Teaching Effectiveness: 5.78/6.00, Class Size 35)
- [34] Spring'21 CS2506: Computer Organization II, Virginia Tech (Teaching Effectiveness: 5.15/6.00, Class Size 148)
- [33] Fall'20 CS4284 Systems & Networking Capstone, Virginia Tech (Teaching Effectiveness: 5.85/6.00, Class Size: 23)
- [32] Spring'20 CS2506: Computer Organization II, Virginia Tech (Teaching Effectiveness: 5.16/6.00, Class Size: 82)
- [31] Spring'15 ECS 1002: Design Projects, Queen's University of Belfast
- [30] Fall'15, ECS 2001: Second Stage Design Projects, Queen's University of Belfast
- [29] Spring'14 ECS 1002: Design Projects, Queen's University of Belfast
- [28] Fall'13 ECS 2001: Second Stage Design Projects, Queen's University of Belfast
- [27] Spring'13 ECS 1002: Design Projects, Queen's University of Belfast
- [26] Fall'12 ECS 2001: Second Stage Design Projects, Queen's University of Belfast
- [25] Fall'11 CS425: Computer Systems Architecture, University of Crete
- [24] Fall'11 CS100: Introduction to Computer Science, University of Crete
- [23] Spring'11 CS225: Computer Organization, University of Crete
- [22] Spring'11 CS529: Multi-core Systems Programming, University of Crete
- [21] Fall'10 CS425: Computer Systems Architecture, University of Crete
- [20] Spring'10 CS225: Computer Organization, University of Crete
- [19] Spring'10 CS529: Multi-core Systems Programming, University of Crete

- [18] Fall'09 CS425: Computer Systems Architecture, University of Crete
- [17] Spring'09 CS529: Multi-core Systems Programming, University of Crete
- [16] Spring'09 CS225: Computer Organization, University of Crete
- [15] Fall'08 CS425: Computer Systems Architecture, University of Crete
- [14] Spring'08 CS425: Computer Systems Architecture, University of Crete
- [13] Fall'07 CS5234: Advanced Parallel Computation, Virginia Tech
- [12] Fall'07 CS2504: Introduction to Computer Organization, Virginia Tech
- [11] Spring'07 CS2504: Introduction to Computer Organization, Virginia Tech
- [10] Fall'06 CS4234: Parallel Computation, Virginia Tech
- [9] Spring'06 CSCI644: Advanced Computer Architecture, College of William and Mary
- [8] Fall'05 CSCI444/544: Principles of Operating Systems, College of William and Mary
- [7] Spring'05 CSCI644: Advanced Computer Architecture, College of William and Mary
- [6] Fall'04 CSCI444/544: Principles of Operating Systems, College of William and Mary
- [5] Spring'04 CSCI644: Advanced Computer Architecture, College of William and Mary
- [4] Fall'03 CSCI444/544: Principles of Operating Systems, College of William and Mary
- [3] Spring'03 CSCI644: Advanced Computer Architecture, College of William and Mary
- [2] Fall'02 CSCI444/544: Principles of Operating Systems, College of William and Mary
- [1] Spring'02 ECE291: Computer Engineering II, University of Illinois at Urbana-Champaign

## Seminars Taught

Spring'12 Implementation of Multi-core Programming Models, Universitat Politecnica de Catalunya  
Spring'10 Multi-core Systems Programming and Optimization, Universitat Politecnica de Catalunya  
Spring'08 Multi-core Systems Programming and Optimization, Universitat Politecnica de Catalunya  
Spring'07 Multi-core Systems Programming and Optimization, Universitat Politecnica de Catalunya  
Spring'04 Multithreaded Architectures and Software, College of William and Mary

## Course and Curriculum Development

CS2506: Intro to Computer Organization II, Redeveloped to introduce new open-source processor and tools, Virginia Tech, 2022  
ECS2001: Software and Electronic Systems Engineering Design Projects (2nd Stage), Developed from scratch, Queen's University of Belfast, 2016  
ECS1002: Software and Electronic Systems Engineering Design Projects (1st Stage), Developed from scratch, Queen's University of Belfast, 2016  
CS529: Multicore Processor Programming, Developed from scratch, University of Crete, 2009  
CS425: Computer Systems Architecture, Major revision, University of Crete, 2009  
CS225: Computer Organization, Major revision (multi-core, cache coherence), University of Crete, 2009  
CS5234: Advanced Parallel Computation, Developed from scratch, Virginia Tech, 2006

## Teaching Grants

- [4] **Advanced Topics in Implementing Multicore Programming Models.** Sponsor: Universitat Politecnica de Catalunya. Amount: €2,400 Role: PI. Dates of activity: 05/2012–06/2012.
- [3] **Multi-core Systems Programming.** Sponsor: Universitat Politecnica de Catalunya. Amount: €2,400 Role: PI. Dates of activity: 05/2010–06/2010.
- [2] **Multi-core Systems Programming.** Sponsor: Universitat Politecnica de Catalunya. Amount: €3,600. Role: PI. Dates of activity: 05/2008–06/2008.
- [1] **Multi-core Systems Programming and Optimization.** Universitat Politecnica de Catalunya. Funding amount: €3,600. Role: PI. Dates of activity: 05/2007–06/2007.

## Supervision

### Ph.D. Thesis Students

#### Primary Advisor

- [19] **Mona Moghadampanah** – Computer Science, Virginia Tech. In progress. Thesis area: *Scheduling of Workloads in the Continuum*.
- [18] **Adib Rezaei** – Computer Science, Virginia Tech. In progress. Thesis area: *Accelerator Virtualization and Fault Tolerance*.
- [17] **Sina Heidari** – Computer Science, Virginia Tech. In progress. Thesis area: *Large-Scale Processing of Graph Neural Networks*.
- [16] **Jiakun Fan** – Computer Science, Virginia Tech. In progress. Thesis area: *Edge AI*.

- [15] **Yunqi Shen** – Computer Science, Virginia Tech. In progress. Thesis area: *Tiered Memory Systems*.
- [14] **Farhana Amin** – Computer Science, Virginia Tech. In progress. Thesis area: *Programming Models for and by LLMs*.
- [13] **Xiangchen Li** – Electrical and Computer Engineering, Virginia Tech. In progress. Thesis area: *Edge Computing and Networking for AI*.
- [12] **Dr. Emadeldin Abdrabou** – Electrical and Computer Engineering, Virginia Tech. December 2025. Thesis title: *On the Optimization of Edge Server Scaling and Placement for Open Radio Access Network (O-RAN) Slicing*. (co-advised with Scott Midkiff)
- [11] **Dr. Esha Barlaskar** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Ivor Spence, Peter Kilpatrick). November 2020. Thesis title: *User-Centric Cloud Application Management*.
- [10] **Dr. Nan Wang** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast. July 2019. September 2019. Thesis title: *Resource Management for Edge Computing Systems*.
- [9] **Dr. Roxana Istrate** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast. July 2019. July 2019. Thesis title: *Efficient Neural Network Architecture Search*.
- [8] **Dr. Sakil Barbhuiya** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Peter Kilpatrick). July 2018. Thesis title: *Anomaly Detection in Cloud and Mobile Devices*.
- [7] **Dr. Charalambos Chalios** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Hans Vandierendonck). July 2017. Thesis title: *Software-Defined Significance-Based Computing*.
- [6] **Dr. Giorgis Georgakoudis** – Computer and Telecommunications Engineering, University of Thessaly (co-supervised with Spyros Lalidis). May 2016. Thesis title: *Scheduling and Performance Characterization on Heterogeneous Computing Systems*.
- [5] **Dr. Jae-seung Yeom** – Computer Science, Virginia Tech (co-supervised with Madhav Marathe). May 2014. Thesis title: *Optimizing Data Accesses for Scaling Data-intensive Scientific Applications*.
- [4] **Dr. Spyros Lyberis** – Computer Science, University of Crete. July 2013. Thesis title: *Myrmics: A Scalable Runtime System for Global Address Spaces*.
- [3] **Dr. Scott Schneider** – Computer Science, Virginia Tech. December 2010. Thesis title: *Shared Memory Abstractions for Heterogeneous Multicore Processors*.
- [2] **Dr. Filip Blagojevic** – Computer Science, Virginia Tech. May 2008. Thesis title: *Scheduling on Asymmetric Parallel Architectures*.
- [1] **Dr. Matthew Curtis-Maury** – Computer Science, Virginia Tech. March 2008. Thesis title: *Improving the Efficiency of Parallel Applications on Multithreaded and Multicore Systems*. **Virginia Tech Outstanding Ph.D. Dissertation Award**.

**Co-Advisor**

- [17] **Shunyu Yao** – Computer Science, Virginia Tech. In progress, co-advised with Ali R. Butt. *Serverless HPC*.
- [16] **Yuze Li** – Computer Science, Virginia Tech. *Programming Language Support for Far Memory*.
- [15] **Kazi Hassan Ibn Arif** – Computer Science, Virignia Tech. *Sparsity in Multimodal Learning*.
- [14] **Dr. Abdullahi Abubakar** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast. December 2023. Thesis title: *Anomaly Detection in Longitudinal Data with Applications in Cloud Computing and Healthcare*.
- [13] **Dr. Ioannis Tsiokanos** – Electronics, Electrical Engineering and Computer Science, Queen's University Belfast (co-supervised with Georgios Karakonstantis). December 2021. Thesis title: *Cross-layer Instruction-Aware Timing Error Mitigation & Evaluation for Energy Efficient Dependable Architectures*.
- [12] **Dr. Konstantinos Tovletoglou** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Georgios Karakonstantis). June 2021. Thesis title: *Modeling and design of energy-efficient dependable memory sub-systems*.
- [11] **Dr. Jiawen Sun** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Hans Vandierendonck). July 2017. Thesis title: *The GraphGrind framework: fast graph analytics on large shared-memory systems*.
- [10] **Dr. Stuart McCool** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Peter Kilpatrick). July 2016. Thesis title: *Guidance Environments for Program Parallelization and Analysis*.
- [9] **Dr. Ahmad Hassan** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Hans Vandierendonck). July 2016. Thesis title: *Software Management of Hybrid Main Memory Systems*.
- [8] **Dr. Eoghan O'Neill** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Peter Kilpatrick). October 2015. Thesis title: *A Framework for Managing Shared Accelerators in Heterogeneous Environments*.
- [7] **Dr. Aleksandr Khasymski** – Computer Science, Virginia Tech (co-supervised with Ali R. Butt). February 2015. Thesis title: *Accelerated Storage Systems*.
- [6] **Dr. Chun-Yi Su** – Computer Science, Virginia Tech (co-supervised with Kirk W. Cameron). December 2014. Thesis title: *Energy-Aware Thread and Data Management in Heterogeneous Multi-Core and Multi-Memory Systems*.
- [5] **Dr. Vassilis Papaefstathiou** – Computer Science, University of Crete (co-supervised with Manolis Katevenis). November 2013. Thesis title: *Architectural Support for Software-Guided Energy Reduction of Manycore Communication*.
- [4] **Dr. Muhammad Mustafa Rafique** – Computer Science, Virginia Tech. September 2011 (co-supervised with Ali R. Butt). Thesis title: *An Adaptive Framework for Managing Heterogeneous Many-Core Clusters*.

- [3] **Dr. Dong Li** – Computer Science, Virginia Tech. January 2011 (co-supervised with Kirk W. Cameron). *Scalable and Energy Efficient Execution Methods for Multicore Systems*.
- [2] **Dr. John Christian Linford** – Computer Science, Virginia Tech (co-supervised with Adrian Sandu). May 2010. Thesis title: *Accelerating Atmospheric Modeling Through Emerging Multicore Technologies*.
- [1] **Dr. Richard Tran Mills** – Computer Science, College of William & Mary (co-supervised with Andreas Stathopoulos). November 2004. Thesis title: *Dynamic Adaptation to CPU and Memory Load in Scientific Applications*.

### Postdoctoral Research Fellows

- [17] **Dr. Dimitris Spatharakis** – Visiting Postdoctoral Fellow, School of Electrical and Computer Engineering, National Technical University of Athens. 04/25–05/25.
- [16] **Dr. Sakil Barbhuiya** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast. Research themes. Cloud-based Distributed Manufacturing. 05/18–08/19. Research themes: Smart manufacturing as a service.
- [15] **Dr. Jun-Kyu Lee** – EEECS, Queen's University of Belfast. 04/17–12/20. Research themes: Approximate computing.
- [14] **Dr. Damon Fenacci** – EEECS, Queen's University of Belfast. 01/17–01/18. Research themes: Memory management.
- [13] **Dr. Giorgis Georgakoudis** – EEECS, Queen's University of Belfast. 05/16–09/18. Research themes: System software and hardware/software interface.
- [12] **Dr. Blessen Varghese** – EEECS, Queen's University of Belfast. 01/16–06/17. Research themes: Energy-efficient and resilient high-performance computing.
- [11] **Dr. Kiril Dichev** – EEECS, Queen's University of Belfast. 10/15–08/19. Research themes: Exascale resilience.
- [10] **Dr. Cheol-Ho Hong** – EEECS, Queen's University of Belfast. 06/15–12/17. Research themes: Accelerator virtualization.
- [9] **Dr. Lev Mukhanov** – EEECS, Queen's University of Belfast. 04/14–12/20. Research themes: Abstraction-level energy accounting in many-core programming languages.
- [8] **Dr. Zafeirios Papazachos** – EEECS, Queen's University of Belfast. 01/14 – 08/19. Research themes: Data center performance & reliability monitoring and optimization.
- [7] **Dr. Hemant Mehta** – EEECS, Queen's University of Belfast. 10/15–04/17. Research themes: Virtual machine energy accounting.
- [6] **Dr. Yun Wu** – EEECS, Queen's University of Belfast. 01/14–01/17. Research themes: Energy-proportional many-core computing systems.
- [5] **Dr. Paul Harvey** – EEECS, Queen's University of Belfast. 01/16–09/16. Research themes: Exascale programming models.
- [4] **Dr. Ahmed Sayed** – EEECS, Queen's University of Belfast. 09/14–02/15. Research themes: System software for real-time in-memory analytics.

- [3] **Dr. Konstantina Mitropoulou** – EEECS, Queen's University of Belfast. 01/14–03/14. Research themes: System software for real-time in-memory analytics.
- [2] **Dr. Hans Vandierendonck** – FORTH-ICS. 10/10–10/11. Research themes: Parallel programming, scheduling.
- [1] **Dr. Christos D. Antonopoulos** – Computer Science, College of William & Mary. 06/04–06/06. Research themes: Energy-efficient parallel computation, runtime systems, and memory management.

### Pre-Doctoral Research Assistants

- [4] **Kai Chen** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast. In progress. Research area: *Multi-scale Power and Performance Modeling*.
- [3] **George Tzenakis** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast. Research area: *Dynamic Parallelism and Elasticity* 10/12–02/17.
- [2] **Chhaya Trehan** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast. Research area: *Optimization Algorithms for Energy-Efficiency* 01/15–05/16.
- [1] **Mahwish Arif** – Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast (co-supervised with Hans Vandierendonck). Research area: *Performance Portability*.

### Visiting Scholars

- [2] **Prof. Oscar Garcia Lorenzo** – Department of Computer Architecture, University of Santiago de Compostela. April 2016. Thesis title: *Hardware counter-based performance analysis, modeling, and improvement through thread migration in NUMA systems*.
- [1] **Dr. Satoshi Imamura** – System LSI Laboratory. Kyushu University. Research area: *Energy-Efficiency Optimization on Multicore NUMA Servers*.

### M.Sc. Research Students

#### Primary Advisor

- [29] **Katelyn Crumpacker** – Computer Science, Virginia Tech. *AI-Generated Energy-Efficient Software*.
- [28] **Timothy Coyne** – Computer Science, Virginia Tech, May 2025. *Performance Portability of CUDA Across NVIDIA GPU Architectures*.
- [27] **Max Fisher** – Computer Science, Virginia Tech, May 2025. Thesis title: *Analysis of Memory Access Patterns and Pre-Fetching Strategies for Large Language Model Inferencing*.
- [26] **Moustafa Kahla** – Electrical and Computer Engineering, Virginia Tech. December 2023. Thesis title: *Automatic Source Code Transformation To Pass Compiler Optimization*.
- [25] **Manthan Shah** – Electrical and Computer Engineering, Virginia Tech. June 2023. Thesis title: *Analysis of YOLOv7 Inference Performance through a Systems Perspective and the identification of optimization opportunities*.

- [24] **Shreya Bhandare** – Computer Science, Virginia Tech. June 2023. Thesis title: *Designing RDMA-based Efficient Communication for GPU Remoting..*
- [23] **Melissa Cameron** – Computer Science, Virginia Tech. June 2023. Thesis title: *Parallel Islands: A Diversity Aware Tool For Parallel Computing Education.*
- [22] **Ishaan Gulati** – Computer Science, Virginia Tech. June 2023. Thesis title: *A Scalable Leader-Based Consensus Algorithm.*
- [21] **Matthew Jackson** – Computer Science, Virginia Tech. May 2023. Thesis title: *Computational Offloading for Real-Time Computer Vision in Unreliable Multi-Tenant Edge Systems.*
- [20] **Daniel Moyer** – Computer Science, Virginia Tech. May 2021. Thesis title: *Punching Holes in the Cloud: Direct Communication between Serverless Functions using NAT Traversal*
- [19] **Dimitris Chassapis** – Computer Science, University of Crete. Thesis title: *Static Analysis for Parallelism and Correctness in Task Dataflow Programming Models.*
- [18] **Ioannis Manousakis** – Computer Science, University of Crete. July 2013. Thesis title: *TPROF: An Energy Profiler for Task-Parallel Programs.*
- [17] **Evangelos Kafentarakis** – Computer Science, University of Crete. July 2013. Thesis title: *Lprof: A Tool for Profiling Locality Awareness in a Task-Based Programming Model.*
- [16] **Christi Symeonidou** – Computer Science, University of Crete. July 2013. Thesis title: *Distributed Region-Based Allocation and Synchronization.*
- [15] **Kallia Chronaki** – Computer Science, University of Crete. June 2013. Thesis title: *Exploiting Pipelined Parallelism with Task Dataflow Programming Models.*
- [14] **Alexandros Labrineaas** – Computer Science, University of Crete. June 2013. Thesis title: *BDDT-SCC: A Task-Parallel Runtime for the Single-Chip Cloud Computer.*
- [13] **Anastasios Papagiannis** – Computer Science, University of Crete. March 2013. Thesis title: *MapReduce on Distributed-Memory Many-Core Architectures.*
- [12] **Angelos Papatriantafyllou** – Computer Science, University of Crete. March 2012. Thesis title: *Optimized Block-Based Dependence Analysis for Task Parallelism.*
- [11] **Constantinos Koukos** – Computer Science, University of Crete (co-supervised with Angelos Bilas). August 2010. Thesis title: *Locality Management in Task-Based Parallel Programming Models.*
- [10] **Pranav Tendulkar** – ALArI Institute Advanced Studies in Embedded Systems Design. June 2010. Thesis title: *Runtime OpenMP Support using Hardware Primitives on Explicitly Memory Managed Multi-Processors.*
- [9] **Michail Zampetakis** – Computer Science, University of Crete. April 2010. *Runtime Support for Programming Explicit Communication Chip Multiprocessors.*
- [8] **Maria Katsamani** – Computer Science, University of Crete (co-supervised with Manolis Katsanidis). March 2010. Thesis title: *Software Implementation of MPI Primitives on Multicore FPGAs.*

- [7] **Benjamin Rose** – Computer Science, Virginia Tech. May 2009. Thesis title: *Intra- and Inter-Chip Communication Support for Asymmetric Multicore Processors with Explicitly Managed Memory Hierarchies.*
- [6] **Beran Nova Bryant** – Computer Science, Virginia Tech. May 2008. *Temperature-Aware Scheduling of Parallel Applications on Shared-Memory Multiprocessors.*
- [5] **Harshil Shah** – Computer Science, Virginia Tech. May 2008. *Application Parallelization on the Cell/BE.*
- [4] **Jyotirmaya Tripathi** – Computer Science, Virginia Tech. May 2008. *Scheduling Parallel Applications on Paravirtualized Shared-Memory Multiprocessors.*
- [3] **Ankur Shah** – Computer Science, Virginia Tech. April 2008. Thesis title: *Prediction Models for Multi-dimensional Power-Performance Optimization on Many Cores.*
- [2] **Scott Schneider** – Computer Science, College of William & Mary. June 2005. Thesis title: *Factory: An Object-Oriented Parallel Programming Substrate for Deep Multiprocessors.*
- [1] **Robert McGregor** – Computer Science, College of William & Mary. May 2005. *Scheduling with Bus Bandwidth Considerations on Shared-Memory Multiprocessors.*

### Co-Advisor

- [4] **Foivos Zakkak** – Computer Science, University of Crete (co-supervised with Angelos Bilas). March 2012. Thesis title: *SCOOP: Language Extensions and Compiler Optimizations for Task-based Programming Models.*
- [3] **Ioannis Kesapides** – Computer Science, University of Crete (co-supervised with Angelos Bilas). March 2011. Thesis title: *Dynamic Dependence Analysis on Multi-core Processors.*
- [2] **Michail Alvanos** – Computer Science, University of Crete (co-supervised with Angelos Bilas). June 2010. Thesis title: *Design and Evaluation of a Task-based Parallel H.264 Video Encoder for the Cell Processor.*
- [1] **George Tzenakis** – Computer Science, University of Crete (co-supervised with Angelos Bilas). October 2009. Thesis title: *Tagged Procedure Calls (TPC): Efficient Runtime Support for Task-Based Parallelism on the Cell Processor.*

### Undergraduate (BEng/BSc) Research Students

- [43] **Kayden Moraes** – Computer Science, Virginia Tech. Fall 2025. *Agentic AI for HPC Code Optimization.*
- [42] **Adarsh Chittimoori** – Computer Science, Virginia Tech. Fall 2025. *Agentic AI for HPC Code Optimization.*
- [41] **Claire Shin** – Computer Science, Virginia Tech. Fall 2025. *Agentic AI for HPC Code Optimization.*
- [40] **Ariana Nafisi** – Computer Science, Virginia Tech. Fall 2025. *Agentic AI for HPC Code Optimization.*
- [39] **Krishnateja Reddy** – Computer Science, Virginia Tech. Spring 2025, Fall 2025. *Agentic AI for HPC Code Optimization.*

- [38] **Kathleen Reece** – Computer Science, Virginia Tech. Spring 2025, Fall 2025. *Agentic AI for HPC Code Optimization.*
- [37] **Bryan Torres** – Computer Science, Virginia Tech. Spring 2025, Fall 2025. *Agentic AI for HPC Code Optimization.*
- [36] **Veljko Cvetkovic** – Computer Science, Virginia Tech. Spring 2025, Fall 2025. *Agentic AI for HPC Code Optimization.*
- [35] **Yasir Hasan** – Computer Science, Virginia Tech. Fall 2024-Spring 2025. *Agentic AI for HPC Code Optimization.*
- [34] **Denise Cooney** – Computer Science, Virginia Tech. Spring 2025. *Agentic AI for HPC Code Optimization.*
- [33] **Asif Rahman** – Computer Science, Virginia Tech. Fall 2024-Spring 2025. *Agentic AI for HPC Code Optimization.*
- [32] **Aneesh Tummetti** – Computer Science, Virginia Tech. Fall 2024-Spring 2025. *Agentic AI for HPC Code Optimization.*
- [31] **Aidan Walters** – Computer Science, Virginia Tech. Fall 2024-Spring 2025. *Agentic AI for HPC Code Optimization.*
- [30] **Jack Williamson** – Computer Science, Virginia Tech. Summer 2023, Fall 2023. *Supporting flexible SIMD ISAs in WebAssembly.*
- [29] **Anthony Nguyen** – Computer Science, Virginia Tech. Summer 2023, Fall 2023. *WebAssembly Performance Profiling.*
- [28] **Alex Lin** – Computer Science, Virginia Tech. Summer 2023, Fall 2023. *Supporting GPUs in WebAssembly.*
- [27] **Gianfranco Vivanco** – Computer Science, Virginia Tech. Summer 2023, Fall 2023. *Performance Characterization of LLM Inference*
- [26] **Tatiana Monteiro** – Computer Science, Virginia Tech. Summer 2023. *Optimization of Inference from Decision Trees.*
- [25] **Jamie Whiting** – Computer Science, Virginia Tech. Summer 2023. *RISC-V Simulation and System Software.*
- [24] **Riyos Pudasaini** – Computer Science, Virginia Tech. Summer 2023. *Scalable Memory Allocators for Rust.*
- [23] **Angel Gonzalez** – Computer Science, Virginia Tech. Summer 2023. *Cache Simulators.*
- [22] **Kieran Siek** – Computer Science, Virginia Tech. Spring 2022. *Code Generation for Matrix ISA Extensions*
- [21] **Aditya Iyer** – Computer Science, Virginia Tech. Spring 2022. *FaaS Workload Characterization*
- [20] **Parker Harnack** – Computer Science, Virginia Tech. Summer 2021. *Performance Analysis of Persistent Memory Allocators.*

- [19] **Lalitha Kupa** – Computer Science, Virginia Tech. Summer 2021. *NUMA Persistent Memory Management in the Operating System.*
- [18] **Ishaan Singh** – Computer Science, Virginia Tech. Summer 2020. *Container Caching.*
- [17] **Nikolaos Parasyris** – Electrical and Computer Engineering, National Technical University of Athens. September 2015. *Fine-grain energy profiling of large software repositories.*
- [16] **Stylianos Ninidakis** – Computer Science, University of Crete. June 2011. *Parallelizing Irregular applications with Task Dataflow.*
- [15] **Nikolaos Papakonstantinou** – Computer Science, University of Crete. June 2011. *Distributed Dynamic Dependence Analysis for Task Dataflow Models.*
- [14] **Nikolaos Papadopoulos** – Computer Science, University of Crete, February 2012. *Scheduler-Driven Dynamic Data Placement for NUMA Multi-cores.*
- [13] **Ioannis Manousakis** – Computer Science, University of Crete, May 2011. *Component-level Power Instrumentation on Multiprocessors.*
- [12] **Dimitrios Chassapis** – Computer Science, University of Crete, May 2011. *Static Dependence Analysis for Task Dataflow Models.*
- [11] **Christi Symeonidou** – Computer Science, University of Crete, May 2011. *Multi-node Communication Layer on the SARC FPGA Prototype.*
- [10] **Alexandros Labrinea**s – Computer Science, University of Crete, May 2011. *Early Release Optimizations for Task Dataflow Programming Models.*
- [9] **Kallia Chronaki** – Computer Science, University of Crete, May 2011. *Parallel Loop Scheduling on the SARC Multi-core Processor.*
- [8] **Christos Margiolas** – Computer Science, University of Crete. June 2010. *Data Placement and NUMA-Aware Optimization of MapReduce.*
- [7] **Foivos Zakkak** – Computer Science, University of Crete, June 2010 (co-supervised with Angelos Bilas). *Source-to-Source Compiler Optimizations for Task Parallelism.*
- [6] **Spyros Tsatuhas** – Computer Science, University of Crete, June 2010. *POSIX Threads Library Implementation on the SARC FPGA Prototype.*
- [5] **Evangelos Kafentarakis** – Computer Science, University of Crete, June 2009. *Software Shared Memory Layer for CPU-GPU Systems.*
- [4] **Anastasios Papagiannis** – Computer Science, University of Crete, June 2009. *Performance Analysis of Virtual Machine Schedulers in Xen.*
- [3] **Patric Fiaux** – Computer Science, Virginia Tech, May 2007. *Application Parallelization and Optimization on Cell/BE.*
- [2] **James Dzierwa** – Computer Science, College of William & Mary, May 2006. *Hardware Monitors for Power-Performance Adaptation.*
- [1] **Evan McCreedy** – Computer Science, College of William & Mary, May 2004. *Multi-level Parallelization of MPIBlast.*

## Service

### Professional Activities

#### Membership in Professional Societies

**IEEE Computer Society (IEEE)**, Fellow (2024–present), Distinguished Visitor (2024–present), Distinguished Contributor (2022–present), Senior Member (2011–2022), Member (1995–2011)

**Association for Computing Machinery (ACM)**, Distinguished Member (2018–present), Senior Member (2011–2018), Member (1995–2011)

**Asia-Pacific Artificial Intelligence Association (AAIA)**, Fellow (2024–present)

**International Artificial Intelligence Industry Alliance (AIIA)**, Fellow (2024–present)

**British Computer Society (BCS)**, Fellow (2014–present)

**The Institution of Engineering and Technology (IET)**, Fellow (2017–present)

**United Kingdom Council of Professors and Heads of Computing (CPHC)**, Member (2012–2019)

**ACM Special Interest Group on Computer Architecture (SIGARCH)**, Member, (2000–present)

**ACM Special Interest Group on Operating Systems (SIGOPS)**, Member, (2000–present)

**ACM Special Interest Group on High Performance Computing (SIGHPC)**, Member, (2000–present)

**Chartered Engineer (CEng)** (2017–present)

**Technical Chamber of Greece**, Member (1996–present)

#### Conference Committee Activities

##### Steering Committee Chair:

[2] ACM International Conference on Supercomputing (ICS) – 2024 – present

[1] IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS) – 2022 – 2023

##### Steering Committee Associate Chair:

[1] ACM International Conference on Supercomputing (ICS) – 2023 – 2024

##### Program Chair/Co-Chair:

[9] ACM International Conference on High Performance Parallel and Distributed Computing (HPDC) – 2026

[8] ACM International Conference on Supercomputing (ICS) – 2023

[7] ACM International Conference on Supercomputing (ICS) – 2022

[6] International Workshop on Deployment and Use of Accelerators (DUAC) – 2025, 2024, 2023, 2022, 2021

[5] IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID) – 2014

[4] International Workshop on Power-Aware Algorithms, Systems and Architectures (PASA) – 2013

[3] EuroMPI MPI Conference – 2011

[2] IEEE International Conference on Scalable Computing and Communications (ScalCom) – 2011

- [1] Workshop on Parallel Programming for Accelerators (PPAC) – 2009, 2010, 2011

**Program Vice Chair/Area Chair:**

- [7] IEEE International Parallel and Distributed Processing Symposium (IPDPS), Area Chair for Programming Models and Runtime Systems – 2026
- [6] International European Conference on Parallel and Distributed Computing (EUROPAR), Global Area Chair, Scheduling and Load Management – 2022
- [5] International Conference on Embedded Computer Systems: Architecture, Modeling and Simulation (SAMOS) – 2016
- [4] IEEE/ACM International Conference on High-Performance Computing, Networking, Architecture and Storage (SC) – 2014
- [3] European Conference on Parallel Processing (EuroPar) – 2012
- [2] IEEE International Parallel and Distributed Processing Symposium (IPDPS) – 2011
- [1] International Conference on Parallel Processing (ICPP) – 2007

**General Chair:**

- [10] IEEE International Conference on Cluster Computing (CLUSTER) – 2018, 2010
- [9] IEEE International Symposium on the Performance Analysis of Systems and Software (ISPASS) – 2018
- [8] ISC Conference Workshop on Approximate and Transprecision Computing on Emerging Technologies – 2018
- [7] HiPEAC Conference Workshop on Approximate Computing – 2018
- [6] SC Conference Workshop on Energy Efficient Supercomputing – 2017, 2016, 2015, 2014, 2013
- [5] ParCo Conference MiniSymposium on Edge Computing – 2017
- [4] ParCo Conference MiniSymposium on Parallel Programming for Reliability and Energy Efficiency – 2016
- [3] ParCo Conference MiniSymposium on Energy and Resilience in Parallel Programming – 2015
- [2] HiPEAC Conference Workshop on Energy Efficient Heterogeneous Computing – 2015
- [1] ICPP Conference Workshop on Power Aware Systems and Architectures – 2013

**Program Committee:**

- [54] ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS) – 2026, 2021
- [53] Annual AAAI Conference on Artificial Intelligence (AAAI), Senior Program Committee Member – 2026

- [52] ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP) – 2026, 2025, 2021, 2020, 2015, 2013
- [51] International Conference on Parallel Processing (ICPP) – 2025, 2024, 2021, 2020, 2019, 2018, 2017, 2016, 2014, 2008, 2004, 2003
- [50] IEEE/ACM International Symposium on Microarchitecture (Micro) – 2025, 2024 (External Review Committee)
- [49] IEEE International Conference on Parallel Architectures and Compilation Techniques (PACT) – 2025, 2023, 2022, 2009
- [48] International Symposium on Computer Architecture (ISCA) – 2025
- [47] IEEE/ACM International Symposium on High Performance Distributed Computing (HPDC) – 2025, 2021, 2020, 2019
- [46] ACM International Conference on Supercomputing (ICS) – 2025, 2021, 2020, 2017, 2014, 2012, 2011, 2009, 2007
- [45] IEEE/SBC International Symposium on Computer Architecture and High-Performance Computing (SBAC-PAD) – 2025
- [44] IEEE International Parallel and Distributed Processing Symposium (IPDPS) – 2024, 2023, 2021, 2020, 2019, 2018, 2017, 2014, 2013
- [43] European Conference on Parallel Processing (EuroPar) – 2024, 2023, 2020, 2016, 2014, 2013
- [42] IEEE Big Data – 2024, 2023, 2018, 2017, 2016, 2015, 2014, 2013
- [41] IEEE International Conference on Edge Computing (EDGE) – 2022
- [40] IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID) – 2022, 2021, 2020, 2019, 2018, 2016, 2015, 2013
- [39] International Supercomputing Conference (ISC) – 2020, 2019, 2018
- [38] International Green and Sustainable Computing Conference (IGSC) – 2020, 2019
- [37] Workshop on Languages and Compilers for Parallel Computing (LCPC) – 2020
- [36] IEEE International Conference on High-Performance Computing (HiPC) – 2019, 2016, 2015, 2014
- [35] Parallel Computing Conference (ParCo) – 2019, 2017, 2015
- [34] IEEE Graph Computing Conference (GC) – 2019
- [33] IEEE/ACM International Conference on High-Performance Computing, Networking, Storage and Analysis (SC) – 2018, 2016, 2015, 2013, 2012
- [32] ACM International Conference on Distributed Event-Based Systems (DEBS) – 2018
- [31] International Conference on Embedded Computer Systems: Architecture, Modeling, and Simulation (SAMOS) – 2018, 2017, 2015, 2014

- [30] ISC Conference Workshop on Communication Architectures for HPC, Big Data, Deep Learning, and Clouds at Extreme Scale (ExaComm) – 2018, 2017
- [29] ACM Conference on Computing Frontiers (CF) – 2017, 2015, 2014, 2011
- [28] IEEE Conference on Cluster Computing (CLUSTER) – 2016, 2015, 2013, 2012, 2011
- [27] ISC Workshop on Energy-Aware High-Performance Computing (EnaHPC) – 2017, 2016, 2015, 2014
- [26] IEEE International Conference on Big Data (BigData) – 2024, 2017, 2016, 2014
- [25] IEEE International Conference on Ubiquitous Computing and Communications (IUCC) – 2016, 2012
- [24] HiPEAC International Conference on High Performance and Embedded Architectures and Compilation – 2015, 2014, 2013, 2012
- [23] ACM PPoPP Conference Workshop on General Purpose Processing using GPU (GPGPU) – 2015, 2014
- [22] Feedback Computing Conference – 2015, 2010
- [21] IEEE International Conference on Green Computing and Communications (GreenCom) – 2013, 2011, 2010
- [20] IEEE International Conference on Parallel and Distributed Systems (ICPADS) – 2012, 2010, 2006, 2004
- [19] IEEE High-Performance Computing and Communications Conference (HPCC) – 2012, 2009
- [18] Symposium on Application Accelerators for High-Performance Computing (SAAHPC) – 2012, 2011, 2010, 2009
- [17] IFIP Network and Parallel Computing Conference (NPC) – 2012, 2011, 2010
- [16] International Conference on Architecture of Computer Systems (ARCS) – 2012, 2011, 2010
- [15] IEEE Network and Storage Systems Conference (NAS) – 2011, 2010, 2009
- [14] IEEE International Conference on e-Business Engineering (ICEBE) – 2011, 2010
- [13] IEEE Green Computing Conference – 2010
- [12] International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP) – 2010
- [11] IEEE International Conference on Scalable Computing and Communications (ScalCom) – 2010, 2009
- [10] IEEE Cloud Computing Conference (CloudCom) – 2010, 2009
- [9] IEEE International Conference on Computational Science and Engineering (CSE) – 2010, 2009

- [8] International Conference on Future Computational Technologies and Applications (Future Computing) – 2010
- [7] International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT) – 2010
- [6] IEEE Autonomic and Trusted Computing Conference (ATC) – 2008, 2007, 2006
- [5] Balkan Conference on Informatics (BCI) – 2007
- [4] ACM SIGMETRICS International Conference on Measurement and Modeling of Computer and Communication Systems – 2006
- [3] IEEE International Conference on Pervasive Systems (ICPS) – 2005
- [2] International Symposium on High Performance Computing (ISHPC) – 2003
- [1] International Conference on Computational Science (ICCS) – 2001

**Program Committee (Workshops):**

- [21] ICPP Conference Workshop on Heterogeneous and Unconventional Cluster Architectures and Applications (HUCAA) – 2016, 2015
- [20] ParCo Conference MiniSymposium on Parallel Programming for Reliability and Energy-Efficiency (PP4REE) – 2016
- [19] HiPEAC Conference Workshop on Approximate Computing (WAPCO) – 2016, 2015
- [18] CGO Conference Workshop on Code Optimization for Multi- and Many-Cores (COSMIC) – 2015, 2014
- [17] HiPEAC Conference Workshop on Programmability and Architectures for Heterogeneous Multicores (MULTIPROG) – 2015, 2014, 2013, 2012, 2011, 2010
- [16] ICPP Conference Workshop on Parallel Programming Models and System Software for High-End Computing (P2S2) – 2014, 2013
- [15] SC Conference Energy-Efficient Supercomputing Workshop (E2SC) – 2014, 2013
- [14] ISC Conference Workshop on Virtualization for High-Performance Computing (VHPC) – 2014, 2013, 2012, 2011, 2010, 2009, 2008
- [13] PLDI Conference Workshop on Memory Systems Performance and Correctness (MSPC) – 2014, 2011
- [12] IPDPS Workshop on Accelerators and Hybrid Exascale Systems (ASHES) – 2014, 2013, 2012
- [11] IBM Extreme Scale Parallel Architecture and Systems Workshop (ESPAS) – 2014
- [10] Embedded Operating Systems Workshop (EWiLi) – 2013
- [9] ISCA Conference Workshop on Future Architectural Support for Parallel Programming Workshop (FASPP) – 2012, 2011

- [8] HiPEAC Workshop on Computer Architecture and Operating System CoDesign (CAOS) – 2012
- [7] PACT Conference Workshop on Programming Models for Emerging Architectures (PMEA) – 2011, 2010, 2009
- [6] IPDPS Conference Workshop on Software Engineering Innovation for HPC Clouds (SinHPC) – 2011
- [5] ICS Conference on Workshop on Characterizing Applications for Heterogeneous Exascale Systems (CACHES) – 2011
- [4] International Workshop on Cloud Computing Interoperability and Services (InterCloud) – 2010
- [3] ISCA Conference Workshop on Next Generation Multi/Many-core Technologies (FMT) – 2010, 2008
- [2] IPDPS Conference High-Performance Power-Aware Computing Workshop (HPPAC) – 2009, 2008
- [1] IBM Cell Processor Programming Workshop (CELL) – 2009

**Steering Committee Member:**

- [3] ACM International Conference on Supercomputing (ICS) – 2022–present
- [2] IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS) – 2018–present
- [1] IEEE International Conference on Cluster Computing (CLUSTER) – 2009–2011, 2017–2019

**Other Committee Service:**

- [9] IEEE/ACM International Symposium on Microarchitecture (MICRO) – External Review Committee, 2024
- [8] IEEE/ACM International Conference on High-Performance Computing, Networking, Storage and Analysis (SC) – Reproducibility Challenge Committee 2021
- [7] IEEE/ACM International Conference on High-Performance Computing, Networking, Storage and Analysis (SC) – HPC Impact Showcase Chair 2017. Tutorials Committee 2014, 2013
- [6] ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP) – External Review Committee 2014, 2012
- [5] International Supercomputing Conference (ISC) – Tutorials Committee 2014, 2013, 2012
- [4] HiPEAC Conference – Workshop and Tutorials Chair 2011
- [3] EuroMPI Conference – Finance Chair 2011
- [2] ACM International Conference on Supercomputing (ICS) – Finance Chair 2009, Workshops and Tutorials Chair 2007

- [1] SIAM Conference on Parallel Processing for Scientific Computing – Mini-Workshop Organizer 2006, 2004

**Session Chair**

- [20] ACM International Conference on Supercomputing (ICS) – 2025
- [19] ACM International Conference on Supercomputing (ICS) – 2023 (Keynote Sessions)
- [18] ACM International Conference on Supercomputing (ICS) – 2022 (Keynote Sessions)
- [17] Workshop on Deployment and use of Accelerators (DUAC) – 2023, 2022
- [16] IEEE/ACM International Symposium on High-Performance Distributed Computing (HPDC) – 2021
- [15] ACM International Conference on Supercomputing (ICS) – 2021
- [14] ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS) – 2021
- [13] ACM International Conference on Supercomputing (ICS) – 2020
- [12] IEEE/ACM International Symposium on High-Performance Distributed Computing (HPDC) – 2020
- [11] ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS) – 2020
- [10] IPDPS Workshop on Variability in Computing Systems (VarSys) – 2016
- [9] SC Workshop on Energy-Efficient Supercomputing (E2SC) – 2014
- [8] IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID) – 2014
- [7] International Conference on Embedded Computer Systems: Architecture, Modeling and Simulation (SAMOS) – 2013
- [6] ICPP Conference Workshop on Power Aware Systems and Architectures – 2013
- [5] IEEE/ACM International Conference on High-Performance Computing, Networking, Analysis and Storage (SC) – 2013, 2012
- [4] ACM International Conference on Computing Frontiers (CF) – 2011
- [3] International Conference on High Performance and Embedded Architectures and Compilation (HiPEAC) – 2011, 2008
- [2] International Conference on Parallel Processing (ICPP) – 2010
- [1] IEEE International Parallel and Distributed Processing Symposium (IPDPS) – 2009

**Editorial Boards**

- [17] Computer Physics Communications. **HPC Specialist Editor**, 2017–present
- [16] Journal of Computational Sciences. **Editorial Board Member**, 2014–present
- [15] Future Internet. **Editorial Board Member**, 2020–present
- [14] International Journal of High Performance Computing Applications (IJHPCA). **Associate Editor**, 2012–present
- [13] Frontiers in High-Performance Computing. **Editor**, 2023–2024
- [12] IEEE Transactions on Parallel and Distributed Systems. **Associate Editor**, 2018–2021
- [11] IEEE Transactions on Parallel and Distributed Systems. **Best Paper Committee**, 2021
- [10] IEEE Transactions on Parallel and Distributed Systems. **Artifact Evaluation Committee**, 2020–2021
- [9] International Journal of Parallel, Emergent and Distributed Systems (IJPEDS). **Associate Editor**, 2010–2019
- [8] Sustainable Computing: Informatics and Systems (SUSCOM). **Editorial Board Member**, 2010–present
- [7] International Journal of Information Technology, Communications and Convergence. **Editorial Board Member**, 2009
- [6] Scientific Programming. **Editorial Board Member**, 2015–2016
- [5] Concurrency and Computation: Practice and Experience (CCPE). **Editorial Review Board**, 2015
- [4] Parallel Computing (PARCO). **Guest Editor**, 2015
- [3] IET Computers and Digital Techniques. **Guest Editor**, 2014

[2] Sustainable Computing: Informatics and Systems (SUSCOM). **Guest Editor**, 2014

[1] Journal of Autonomic and Trusted Computing. **Editorial Board Member**, 2006–2007

**Reviewer Work for Technical Journals, Conferences, and Publishers post 2020**

[17] ACM Transactions on Autonomous and Adaptive Systems (2025 – 1 paper)

[16] IEEE Transactions on Services Computing (2025 – 1 paper)

[15] Future Generation Computer Systems (2025 – 1 paper)

[14] IEEE Transactions on Mobile Computing (2025 – 1 paper)

[13] Frontiers in High Performance Computing (2024 – 1 paper)

[12] Future Generation Computer Systems (2023 – 1 paper)

[11] Computer Physics Communications (2022 – 1 paper)

[10] Engineering with Computers (2022 – 1 paper)

[9] Software – Practice & Experience (2022 – 1 paper)

[8] Concurrency and Computation – Practice & Experience (2022 – 1 paper)

[7] International Journal of High-Performance Computing Applications (2022 – 1 paper)

[6] Future Generation Computer Systems (2021 – 1 paper)

[5] Journal of Parallel and Distributed Computing (2021 – 1 paper)

[4] IEEE Access (2021 – 1 paper)

[3] Bioinformatics (2021 – 1 paper)

[2] IEEE Transactions on Parallel and Distributed Systems (2020 – 1 paper)

[1] IEEE Transactions on Computers (2020 – 1 paper)

**Reviewer Work for Technical Journals, Conferences, and Publishers pre 2020**

[41] ACM Transactions on Computer Systems

[40] ACM Transactions on Programming Languages and Systems

[39] ACM Transactions on Parallel Computing

[38] ACM Transactions on Architecture and Code Optimization

[37] ACM Transactions on Embedded Computing Systems

[36] ACM Transactions on Reconfigurable Technology and Systems

[35] ACM Computer Architecture Letters

- [34] IEEE Micro
- [33] IEEE Computer
- [32] IEEE Spectrum
- [31] IEEE Transactions on Parallel and Distributed Systems
- [30] IEEE Transactions on Computers
- [29] IEEE Access
- [28] The Computer Journal
- [27] Proceedings of the VLDB Endowment
- [26] Journal of Parallel and Distributed Computing
- [25] International Journal of Parallel Programming
- [24] IBM Journal of Research and Development
- [23] BMC Bioinformatics Journal
- [22] ETRI Journal
- [21] IET Computers and Digital Techniques
- [20] Springer Journal of Signal Processing Systems
- [19] International Journal of High-Performance Computing Applications
- [18] Elsevier Journal of Systems and Software
- [17] Transactions on High Performance and Embedded Architectures and Compilation
- [16] Journal of VLSI for Signal Processing
- [15] Future Generation Computer Systems
- [14] Scientific Programming
- [13] EURASIP Journal on Embedded Systems
- [12] Sustainable Computing: Informatics and Systems
- [11] Software Practice and Experience
- [10] Elsevier Journal of Network and Computer Applications
- [9] Springer Nature
- [8] Springer Computing
- [7] Journal of Computer Science and Technology
- [6] ACM Symposium on Parallel Algorithms and Architectures (SPAA)

- [5] IEEE/ACM International Conference on Microarchitecture (MICRO)
- [4] IEEE/ACM International Symposium on High-Performance Computer Architecture (HPCA)
- [3] IEEE International Conference on Modeling and Analysis of Computer and Telecommunication Systems (MASCOTS)
- [2] IEEE International Communications Conference (ICC)
- [1] IEEE International Conference on Quantitative Evaluation of Systems (QEST)

### **Significant University and Departmental Leadership and Service**

- [51] Computer Science Department, Qualifying Exam Committee Chair – Systems, Networking and Cybersecurity (2026)
- [50] College of Engineering Promotion and Tenure Committee, Virginia Tech (Member 2025–present)
- [49] Personnel Committee, Computer Science, Virginia Tech (Chair 2025–present)
- [48] Computer Science Department Head Search Committee, Virginia Tech (2023–2024)
- [47] Personnel Committee, Computer Science, Virginia Tech (Associate Chair 2024–present)
- [46] Personnel Committee, Computer Science, Virginia Tech (Member 2022–present)
- [45] University Proposal Development Institute (PDI) Mentor, Virginia Tech (2024–present)
- [44] PI Eligibility Working Group, Virginia Tech (2022)
- [43] Undergraduate Program Committee, Computer Science, Virginia Tech (2021–2022)
- [42] Faculty Hiring Committee, Computer Science, Virginia Tech (2021)
- [41] School of Computer Science Working Group, Virginia Tech (2020, 2021)
- [40] Operations Working Group, Computer Science, Virginia Tech (2020)
- [39] University Reputation Group, Queen's University Belfast (2018)
- [38] Global Challenges Research Fund Committee, Queen's University Belfast (2018)
- [37] Director of the Queen's Global Research Institute on Electronics, Communications and Information Technology (ECIT) (2018–2019)
- [36] Vice Chancellor Selection Panel, Queen's University Belfast (2017)
- [35] Director of Information Services Selection Panel, Queen's University Belfast (2017)
- [34] University Brand Committee, Queen's University Belfast (2017–present)
- [33] Member of the University Research Forum, Queen's University Belfast (2012–2019)
- [32] Chair of the University High-Performance Computing Advisory Group, Queen's University Belfast (2012–2019)

- [31] Excellence in Leadership Training Program Speaker, Queen's University Belfast (2017)
- [30] Member of the University Academic Council, Queen's University Belfast (2016–2018)
- [29] Member of the Faculty of Engineering and Physical Sciences Promotions Panel, Queen's University Belfast (2016–2019)
- [28] Member of the Faculty of Engineering and Physical Sciences Executive Board, Queen's University Belfast (2016–2019)
- [27] Head of School of EEECS, Queen's University Belfast (2016–2018)
- [26] Post-Doctoral Researchers Peer Mentor, Queen's University Belfast (2017–2018)
- [25] Early-Career Academic Staff Peer Mentor, Queen's University Belfast (2012–2019)
- [24] Senior Academic Staff Recruitment Working Group, Queen's University Belfast (2017–2019)
- [23] Acting Director of Center for Data Science and Scalable Computing, Queen's University Belfast (2016–2019)
- [22] Member of the Senior Management Group, Institute of Electronics, Communication and Information Technologies, Queen's University Belfast (2016–2019)
- [21] Engineering (Unit of Assessment 12) REF Champion, Queen's University Belfast (2018–2019)
- [20] Computer Science (UoA11) REF Champion, Queen's University Belfast (2015–2019)
- [19] School of EEECS Research Strategy Group Co-Chair, Queen's University Belfast (2015–2019)
- [18] BCS Program Accreditation Committee Group Member, Queen's University Belfast (2013)
- [17] Computer Science Building Project Implementation Group, Queen's University Belfast (2013–2017)
- [16] Excellence in Leadership Training Program, Queen's University Belfast (2012–2013)
- [15] Member of the Senior Management Group, School of EEECS, Queen's University Belfast (2012–2018)
- [14] School of EEECS Education Committee, Queen's University Belfast (2012)
- [13] School of EEECS Academic Staff Hiring Panels, Queen's University Belfast (2012–2019)
- [12] Undergraduate Curriculum Committee in Computer Science, University of Crete (2010–2012)
- [11] University Data Center Infrastructure Committee, University of Crete (2010–2012)
- [10] Graduate Admissions Committee in Computer Science, University of Crete (2009–2011)
- [9] Computer Organization Course Coordinator, Virginia Tech (2008–2009)
- [8] Junior Faculty Mentor, Virginia Tech (2008–2009)
- [7] Ph.D. Qualifying Exam Committee, Virginia Tech (2007–2009)
- [6] Computer Science Computing Resources Committee, Virginia Tech (2006–2008)

- [5] Computer Science Graduate Admissions Committee, College of William & Mary (2005–2006)
- [4] Computer Science Graduate Curriculum Committee, College of William & Mary (2005–2006)
- [3] Computer Science Faculty Hiring Committee, College of William & Mary (2002–2005)
- [2] Computer Science Equipment Committee, College of William & Mary (2003–2005)
- [1] Freshman Academic Advisor, College of William & Mary (2004–2006)

### **Significant External Leadership and Service**

- [48] Computing Research Association (CRA), Leadership Academy Committee (2024–present)
- [47] American Association for the Advancement of Sciences (AAAS), Session Reviewer (2024)
- [46] External Accreditation and Evaluation Panel, Graduate Program, Master's in Data Science and Machine Learning, Master's in Information Systems, Hellenic Open University (2023)
- [45] External Accreditation and Evaluation Panel, Undergraduate Program, Department of Informatics and Communications, University of Ioannina (2022)
- [44] Scientific Advisory Board, Kevin Tier-2 HPC Center, Queens University Belfast (2021–present)
- [43] Faculty Appointment Committee, Norwegian University of Science and Technology, Norway (2022)
- [42] External Evaluation Panel, Institute of Informatics and Telecommunications, National Center for Scientific Research "Demokritos", Greece (2022)
- [41] Evaluation Panel, Institute of Computer Science, Foundation for Research and Technology – Hellas, Seed Grants (2021–present)
- [40] Scientific Advisory Board, Marie Curie Individual Fellowship (2022)
- [39] Faculty Appointment and Promotion Committee, University of Ioannina (2022)
- [38] Faculty Appointment Committee, Heidelberg University (2021)
- [37] External Accreditation and Evaluation Panel, Undergraduate Program, Department of Information Systems, Ionian University (2021)
- [36] External Accreditation and Evaluation Panel, Undergraduate Program, School of Electrical and Computer Engineering, National Technical University of Athens (2021)
- [35] Scientific Advisory Board Member, Institute of Computer Science, Foundation for Research and Technology Hellas (FORTH), (2020–present)
- [34] Faculty Appointment and Promotion Committee, University of Crete (2020)
- [33] Faculty Appointment and Promotion Committee, National Technical University of Athens (2020)
- [32] Evaluation Panel, Foundation for Research and Technology – Hellas, Synergy Grants (2019–present)

- [31] Faculty Appointment and Promotion Committee, Technical University of Crete (2019)
- [30] Faculty Appointment and Promotion Committee, University of Thessaly (2019, 2016)
- [29] Engineering and Physical Research Council UK (EPSRC) Strategic Advisory Team (SAT) Member – e-Infrastructure (2018–present)
- [28] European Commission Framework Programme Consultant on Cloud Computing, European Commission DG Unit (2018)
- [27] Faculty Appointment and Promotion Committee, University of Thessaly (2018)
- [26] Faculty Appointment and Promotion Committee, Université Paris-Sorbonne (2018)
- [25] Knowledge Transfer Partnership in Blockchain Technology, Vox Financial Partnerships (2018)
- [24] Knowledge Transfer Partnership in OpenCL Technology, Crevinn (2017)
- [23] Foreign Direct Investment Consultant, Invest Northern Ireland (2017)
- [22] Faculty Appointment and Promotion Committee, Aristotle University of Thessaloniki (2017)
- [21] Faculty Appointment and Promotion Committee, Chalmers University of Technology (2017)
- [20] Faculty Appointment and Promotion Committee, University of Crete (2020,2018,2017,2016)
- [19] Scientific Advisory Board Member, European Commission Horizon2020 INTERTWinE Project (2015–2018)
- [18] Scientific Advisory Member, European Commission Horizon 2020 Programme (2016)
- [17] Grant Proposal Evaluator, King Abdullah University of Science and Technology (2016)
- [16] Faculty Appointment and Promotion Committee, National Technical University of Athens (2016, 2014)
- [15] Faculty Appointment and Promotion Committee, Ionian University (2016)
- [14] Faculty Appointment and Promotion Committee, University of Athens (2015)
- [13] Faculty Appointment and Promotion Committee, Technological Educational Institute of Athens (2015)
- [12] Faculty Appointment and Promotion Committee, Technological Educational Institute of Piraeus (2015)
- [11] Faculty Appointment and Promotion Committee, Technological Educational Institute of Western Greece (2015,2016)
- [10] Faculty Appointment and Promotion Committee, Technological Educational Institute of Piraeus (2014)
- [9] Faculty Appointment and Promotion Committee, Technological Educational Institute of Western Greece (2014)
- [8] Industry-Academic Partnership Training, Westminster Higher Education Forum (2013)

- [7] External examiner, School of Computing, University of Leeds (2012–present)
- [6] Faculty Appointment and Promotion Committee, University of Crete (2013)
- [5] Multiple Industrial Consultancies, Queen's University Belfast (2012–present)
- [4] Faculty Appointment and Promotion Committee, University of Ioannina (2011)
- [3] Faculty Appointment and Promotion Committee, Aristotle University of Thessaloniki (2011)
- [2] Faculty Hiring Committee, Technical University of Denmark (2010)
- [1] Faculty Hiring Committee, National Technical University of Athens (2010)

**Ph.D. Examiner (UK) or Committee Member (US and elsewhere)**

- [53] **Hanry Xu.** Department of Computer Science, Virginia Tech, 2026–present.
- [52] **Hamid Hadian.** Department of Computer Science, Virginia Tech, 2026.
- [51] **Hafiz Adnan Niaz.** Department of Computer Science, University College Dublin, 2025.
- [50] **Sumit Monga.** Department of Computer Science, Virginia Tech, 2025. *Programming Abstractions for Scalable and High-Performance Memory Disaggregation*
- [49] **Shoaib Asig Qazi.** Department of Computer Science, Virginia Tech, 2025.
- [48] **Frank Wayne.** Department of Computer Science, Virginia Tech, 2025. *Fast and Accurate Graph Clustering*.
- [47] **Haihang Wu.** Department of Mechanical Engineering, University of Melbourne, 2025. *Towards Efficient and Robust Deep Neural Networks*.
- [46] **Jing Chen.** Department of Computer Science and Engineering, Chalmers University of Technology, 2024. *Adaptive Task Scheduling and Resource Management Techniques for Energy Efficiency on Multi-core Architectures*.
- [45] **Madhava Krishnan.** Department of Electrical and Computer Engineering, Virginia Tech, 2021 *Designing Scalable System Software for Emerging Storage Technologies*. Supervisor: Changwoo Min.
- [44] **Anastasios Papagiannis.** Department of Computer Science, University of Crete, 2020 *Memory Mapped I/O For Fast Storage*. Supervisor: Angelos Bilas.
- [43] **Simar Preet Singh.** Department of Computer Science & Engineering, Thapar University, 2020 *Energy-Efficient Load Balancing Algorithms in Fog Computing*. Supervisor: Rajesh Kumar.
- [42] **Song Zheng.** Department of Computer Science, Virginia Tech, 2020 *Self-Adaptive Edge Services: Enhancing Reliability, Efficiency, and Adaptiveness under Unreliable, Scarce, and Dissimilar Resources*. Supervisor: Eli Tilevich.
- [41] **Dimitrios Chasapis.** Barcelona Supercomputing Center, 2019 *Towards Resource-Aware Computing for Task-Based Runtimes and Parallel Architectures*. Supervisor: Marc Casas Guix, Miquel Moretó Planas.

- [40] **Leszek Sliwko**. University of Westminster, 2019 *Intelligent Load Balancing in Cloud Computer Systems*. Supervisor: Vladimir Getov.
- [39] **Mohammed Al-Hayanni**. Newcastle University, 2018 *Investigation into Scalable Energy and Performance Models for Many-Core Systems*. Supervisor: Alex Yakovlev.
- [38] **Daniele di Sensi**. University of Pisa, 2018 *Self-Adaptive Solutions for Managing Performance and Power Consumption of Parallel Applications*. Supervisor: Marco Danelutto.
- [37] **Ahsan Javed Awan**. KTH, 2017 *Performance Characterization and Optimization of In-Memory Data Analytics on a Scale-up Server*. Supervisor: Mats Brorsson.
- [36] **Vassilis Vassiliadis**. University of Thessaly, 2017 *Optimization of Program Execution using Computational Significance*. Supervisor: Christos D. Antonopoulos.
- [35] **Rajiv Nishtala**. Barcelona Supercomputing Center, 2017 *Energy Optimising Methodologies on Heterogeneous Data Centers*. Supervisor: Xavier Martorell.
- [34] **Foivos Zakkak**. Computer Science, University of Crete, 2016 *Java on Scalable Memory Architectures*. Supervisor: Polyvios Pratikakis.
- [33] **Ioannis Nikolopoulos**. Computer Science and Engineering, Chalmers University, 2016 *Shared Memory Objects as Synchronization Abstractions: Algorithmic Implementations and Concurrent Applications*. Supervisor: Marina Papatriantafillou.
- [32] **Spiros Agathos**. Computer Engineering, University of Ioannina, 2016 *Efficient OpenMP Runtime Support for General-Purpose and Embedded Multi-core Platforms*. Supervisor: Vassilis Dimakopoulos.
- [31] **Madhavan Manivannan**. Computer Science and Engineering, Chalmers University, 2016 *Towards Runtime-Assisted Cache Management for Task-Parallel Programs*. Supervisor: Per Stenström.
- [30] **Spiros Agathos**. Computer Engineering, University of Ioannina, 2016 *Efficient OpenMP Runtime Support for General-Purpose and Embedded Multi-core Platforms*. Supervisor: Vassilis Dimakopoulos.
- [29] **Kiran Chandramohan**. Informatics, University of Edinburgh, 2016 *Mapping Parallelism to Heterogeneous Processors*. Supervisor: Michael O'Boyle.
- [28] **Javier Bueno Hedo**. Computer Architecture, Universitat Politècnica de Catalunya, 2015 *Runtime Support for Multi-Level Disjoint Memory Address Spaces*. Supervisor: Xavier Martorell.
- [27] **Eleftherios Kosmas**. Computer Science, University of Crete, December 2014. *Techniques for Enhancing Parallelism in Mechanisms that Automatically Execute Sequential Code in Concurrent Environments*. Supervisor: Panagiota Fatourou.
- [26] **Georgios Vassiliadis**, Computer Science, University of Crete, December 2014. Thesis title: *Accelerating Stateful Network Packet Processing Using Graphics Hardware*. Supervisor: Evangelos Markatos, Sotiris Ioannidis.
- [25] **Chun-Yi Su**, Computer Science, Virginia Tech, December 2014. Thesis title: *Resource Management on Heterogeneous Multi-Core, Multi-Memory Systems*. Supervisor: Kirk W. Cameron.

- [24] **Hung-Ching Chang**, Computer Science, Virginia Tech, December 2014. Thesis title: *Measuring, modeling, and optimizing counterintuitive performance phenomena in power-scalable, parallel systems*. Supervisor: Kirk W. Cameron.
- [23] **Muhammad Tayyab Chaudhry**, Computer Science and Information Technology, University of Malaya, December 2014. Thesis title: *Thermal-Aware Scheduling in Green Data Centers*. Supervisor: Ling Teck Chaw.
- [22] **Pranav Tendulkar**, Computer Science, Verimag and University of Grenoble, France, October 2014. Thesis title: *Mapping and Scheduling on Multicore Processors using SMT Solvers*. Supervisor: Oded Maler.
- [21] **Iasonas Polakis**, Computer Science, University of Crete, Greece, February 2014. Thesis title: *Online Social Networks from a Malicious Perspective: Novel Attack Techniques and Defense Mechanisms*. Supervisor: Evangelos Markatos.
- [20] **Anastasios Nanos**, Electrical and Computer Engineering, National Technical University of Athens, Greece, December 2013. Thesis title: *Efficient I/O Resource Sharing in Virtual Machine Environments*. Supervisor: Nectarios Koziris.
- [19] **Nikolaos Kallimanis**, Computer Science, University of Ioannina, Greece, May 2013. Thesis title: *Highly Efficient Synchronization Techniques in Shared Memory Distributed Systems*. Supervisor: Panagiota Fatourou.
- [18] **Mushen Owaida**, Computer & Communication Engineering, University of Thessaly, Greece, September 2012. Thesis title: *Using Parallel Programming Models for Architectural Synthesis*. Supervisor: Nikolaos Bellas.
- [17] **Carlos Villavieja**, Computer Architecture, Universitat Politecnica de Catalunya, January 2012. Thesis title: *Hardware and Software Support for Distributed Shared Memory in Chip Multiprocessors*. Supervisor: Alex Ramirez.
- [16] **Demetrios Antoniades**, Computer Science, University of Crete, December 2011. Thesis title: *Understanding File and Information Sharing Services in Web 2.0*. Supervisor: Evangelos Markatos.
- [15] **Mauricio Alvarez**, Computer Architecture, Universitat Politecnica de Catalunya, September 2011. Thesis title: *Parallel Video Decoding*. Supervisor: Alex Ramirez.
- [14] **Elias Athanasopoulos**, Computer Science, University of Crete, March 2011. Thesis title: *Modern Techniques for the Detection and Prevention of Web 2.0 Attacks*. Supervisor: Evangelos Markatos.
- [13] **Andrea Di Biaggio**, Electronics and Informatics, Politecnico di Milano, December 2010. Thesis title: *Synchronization and Data Distribution Optimization for Distributed Shared Memory Multiprocessors*. Supervisor: Stefano Crespi Reghizzi.
- [12] **Stamatis Kavadias**, Computer Science, University of Crete, September 2010. Thesis title: *Direct Communication and Synchronization Mechanisms in Chip Multiprocessors*. Supervisor: Manolis Katevenis.

- [11] **Korniliос Kourtis**, Electrical and Computer Engineering, National Technical University of Athens, April 2010. Thesis title: *Data Compression Techniques for Performance Improvement of Memory-Intensive Applications on Shared Memory Architectures*. Supervisor: Nectarios Koziris.
- [10] **Nikolaos Anastopoulos**, Electrical and Computer Engineering, National Technical University of Athens, March 2010. Thesis title: *Techniques for the Optimization and Efficient Mapping of Parallel Code on Computational Nodes with Multithreaded and Multicore Processors*. Supervisor: Nectarios Koziris.
- [9] **Dimitrios Syrivelis**, Computer & Communication Engineering, University of Thessaly, June 2009. Thesis title: *Exploiting Reconfigurable Heterogeneous Parallel Architectures in a Multitasking Context: a Systems Approach*. Supervisor: Spyros Lalidis.
- [8] **Matthew Tolentino**, Computer Science, Virginia Tech, February 2009. Thesis title: *Managing Memory for Power, Performance, and Thermal Efficiency*. Supervisor: Kirk W. Cameron.
- [7] **Guanying Wang**, Computer Science, Virginia Tech, September 2009. Thesis title: Evaluating MapReduce Systems: A Simulation Approach. Supervisor: Ali R. Butt
- [6] **Montse Farreras**, Computer Architecture, Universitat Politecnica de Catalunya, December 2008. Thesis title: *Optimizing Programming Models for Massively Parallel Computers*. Principal Supervisor: Toni Cortes.
- [5] **Andrey Chernikov**, Computer Science, College of William & Mary, August 2007. Thesis title: *Parallel Generalized Delaunay Mesh Refinement*. Supervisor: Nikos Chrisochoides.
- [4] **Qi Zhang**, Computer Science, College of William & Mary, December 2006. Thesis title: *The Effect of Workload Dependence in Systems: Experimental Evaluation, Analytic Models, and Policy Development*. Supervisor: Evgenia Smirni.
- [3] **Songqing Chen**, Computer Science, College of William & Mary, August 2004. Thesis title: *Building Internet Caching Systems for Multimedia Content Delivery*. Supervisor: Xiaodong Zhang.
- [2] **Kevin Barker**, Computer Science, College of William & Mary, May 2004. Thesis title: *Runtime Support for Load Balancing of Parallel Adaptive and Irregular Applications*. Supervisor: Nikos Chrisochoides.
- [1] **Zhichun Zhu**, Computer Science, College of William & Mary, August 2003. Thesis title: *Power Considerations for Memory-related Microarchitecture Designs*. Supervisor: Xiaodong Zhang.

### Government Research Funding Panelist & Reviewer Service

- [42] National Science Foundation (NSF). Panelist, 2025 (two programs)
- [41] Swiss National Science Foundation. Grant Proposal Reviewer, 2025, 2020, 2016
- [40] French National Research Agency (ANR). Panelist, 2025
- [39] Hellenic Foundation for Research and Innovation. Greece. Panelist, 2025
- [38] National Science Foundation. Computer and Information Science and Engineering. US. Panelist, 2024

- [37] Hellenic Foundation for Research and Innovation. Greece. Panelist, 2024
- [36] National Science Foundation. Computer and Information Science and Engineering. US. Panelist, 2023
- [35] National Science Foundation. Computer and Information Science and Engineering. US. Panelist, 2021
- [34] Coastal Virginia Center for Cyber Innovation (COVA CCI). US. Grant Proposal Reviewer, 2021
- [33] Knowledge Foundation Sweden. Grant Proposal Reviewer, 2021
- [32] Italian National Research Council (CINECA). Grant Proposal Reviewer, 2021
- [31] European Research Council (ERC). Grant Proposal Reviewer, 2020
- [30] US Department of Energy. Grant Proposal Reviewer, 2020
- [29] Royal Academy of Engineering, United Kingdom. Grant Proposal Reviewer, 2017
- [28] Grant Proposal Evaluator, Austrian Academy of Sciences, 2017
- [27] Technology Foundation STW, The Netherlands. Grant Proposal Reviewer, 2016
- [26] National Science Center, Poland. Grant Proposal Reviewer, 2016
- [25] Natural Science and Engineering Research Council of Canada (NSERC). Discovery Grants Panelist, 2016
- [24] University of Cyprus Research Foundation. Grant Proposal Reviewer, 2016
- [23] Royal Academy of Engineering, United Kingdom. Grant Proposal Reviewer, 2015
- [22] Natural Science and Engineering Research Council of Canada (NSERC). Discovery Grants Panelist, 2015
- [21] Natural Science and Engineering Research Council of Canada (NSERC). Discovery Grants Panelist, 2014
- [20] UK Engineering and Physical Sciences Research Council (EPSRC). Grant Proposal Reviewer, 2021
- [19] UK Engineering and Physical Sciences Research Council (EPSRC). Platform Grant Panelist, 2015
- [18] UK Engineering and Physical Sciences Research Council (EPSRC). Grant Proposal Reviewer, 2018
- [17] UK Engineering and Physical Sciences Research Council (EPSRC). Grant Proposal Reviewer, 2017
- [16] UK Engineering and Physical Sciences Research Council (EPSRC). Grant Proposal Reviewer, 2014

- [15] UK Engineering and Physical Sciences Research Council (EPSRC). Grant Proposal Reviewer, 2013
- [14] UK Engineering and Physical Sciences Research Council (EPSRC). Grant Proposal Reviewer, 2012
- [13] European Commission FP7 Framework Programme. Project Reviewer, 2016
- [12] European Commission FP7 Framework Programme. Project Reviewer, 2015
- [11] European Commission FP7 Framework Programme. Project Reviewer, 2014
- [10] European Commission FP7 Framework Programme. Project Reviewer, 2013
- [9] European Commission FP7 Framework Programme. Grant Proposal Reviewer, 2012
- [8] Greek Secretariat for Research and Technology. Grant Proposal Reviewer, 2010
- [7] U.S.-Israel Binational Science Foundation. Grant Proposal Reviewer, 2009
- [6] United States National Science Foundation. Panelist, 2008
- [5] Natural Science and Engineering Research Council of Canada. Grant Proposal Reviewer, 2007
- [4] United States National Science Foundation. Panelist, 2004
- [3] United States National Science Foundation. Panelist, 2003
- [2] United States National Science Foundation. Panelist, 2002
- [1] Maryland Industrial Partnerships Program. Grant Proposal Reviewer, 2007

### Conference Panels

- [8] *Fifth International Workshop on Extreme Scale Programming Models and Middleware*. Held in conjunction with SC2020. When one size doesn't fit all: programming models in the post-Moore era. Panelist. November 2020.
- [7] *EPSRC Workshop on Manycore Computing: Hardware and Software*. Panelist. Southampton, UK, January 2018.
- [6] Heterogeneous and/or Homogeneous computing supporting parallel applications Which are the key driving factors for the application developers and platform designers? Are they cooperating or fighting? *6th Workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures (PARMA-DITAM 2015)* . Panelist. January 2015.
- [5] *IBM Research ExaChallenge Symposium*. Panelist. Dublin, Ireland, October 2012.
- [4] Accelerators: Fad, Fashion, or Future? *39th International Conference on Parallel Processing (ICPP)*. Panelist. September 2010.
- [3] Key Challenges Presented by Next Generation Hardware Systems. *Fall Creek Falls Conference*. Panelist. September 2007.
- [2] Invitee, *Microsoft Faculty Research Summit*. Redmond, WA, September 2007.
- [1] NSF Next Generation Systems Software Program. *15th ACM International Conference on Supercomputing ICS*. Panelist. June 2001.

## Public Engagement

- [11] TedX MidAtlantic Talk on Myths and Ways Forward for AI. [link](#). November 2025.
- [10] Northwest Indiana Times. Data Centers in Northwest Indiana: Key Issues and Concerns. [link](#). December 2025.
- [9] Fuel Cell Energy. On the Societal and Economic Implications of Datacenters. [link](#). December 2025.
- [8] MSN and WFXR. On the Societal and Economic Implications of Datacenters. [, link](#). December 2025.
- [7] Cardinal News. On the Societal and Economic Implications of Datacenters. [link](#) May 2025.
- [6] VT Science Corner. A Way to Democratize AI. Roanoke Times. [link](#). January 2024.
- [5] Queen's Researchers in Bid to Develop the Fastest Supercomputers. Newswise. [link](#). February 2015.
- [4] NNTV Behind the Science. On the Importance of Supercomputers. 2015.
- [3] Horizon2020 Focus Workshops in Northern Ireland and the UK. March–September 2014.
- [2] Faster than 50 Million Laptops: The Race Goes to Exascale. Interview [link](#)
- [1] Big Iron Move Toward Exascale. Interview [link](#)

## Invited Seminars and Talks

- [55] SWEET: A Hardware & Software Stack for Wrist-to-Cloud Intelligence. NSF CSR Principal Investigators Meeting, Boca Raton, FL, September 2025.
- [54] SWEET: System Architectures and Programming Abstractions for Resilient and Efficient Edge AI, Discover-US Webinar, European Commission, Virtual Event, April 2025.
- [53] Sustainable AI from the Viewpoint of an AI Skeptic, Distighuished Speaker Seminar, Department of Computer Engineering and Informatics, Virtual Event, December 2024.
- [52] Programming Models for High-Performance Computing: Key Drivers and Barriers to Adoption, Invited Talk, First NI-HPC Users Conference, Virtual Event, October 2021.
- [51] Why Should We Still be Concerned about Energy Management in System Software?, Invited Talk, 12th International Green and Sustainable Computing Conference, Virtual Event, October 2021.
- [50] From Approximate to Significance-Driven to Transprecision Computing: Challenges and Opportunities, Distinguished Speaker Seminar, Department of Computational Science, ETH Zurich, April 2018.
- [49] Virtualizing Any Accelerator Anywhere, Distinguished Speaker Seminar, Department of Computer Science, College of William and Mary, January 2018.
- [48] The Jevons Paradox in Computing Systems Research, Distinguished Lecture Series, Department of Computer Science, Virginia Tech, November 2016.

- [47] *Computational Significance and its Implications for HPC*, 13th Workshop on Clusters, Clouds, and Data for Scientific Computing (**CCDSC'16**) , Chemin de Chanzé, France, October 2016.
- [46] *Computational Significance and its Implications for Computing Systems*, School of Electrical and Electronic Engineering, Newcastle University, October 2016.
- [45] *Scaling Up, Out, or Down*, School of Informatics, University of Edinburgh, March 2016.
- [44] *Significance-Driven Runtime Systems*, RoMoL'16 Workshop, Barcelona, Spain, March 2016.
- [43] *Advances in Energy-Efficient and Resilient HPC: Scaling Up, Out, or Back?*, Cardiff University, March 2016.
- [42] *Variability: Why should we care?*, Birds of a Feather Session on Variability in Large-Scale Computing Systems, held in conjunction with the SC'15 Conference, Austin, TX, November 2015.
- [41] *New Approaches to Energy-Efficient and Resilient HPC*, Department of Computer Science, Old Dominion University, November 2015.
- [40] *HPDC Research at Queen's: An Overview*, ARM High-Performance Computing Group, Manchester, UK, November 2015.
- [39] *Server Resource Provisioning for Real-Time Analytics using Iso-Metrics*, Workshop on Performance Modeling: Methods and Applications, in conjunction with the 2015 International Supercomputing Conference (**ISC'15**) , Frankfurt, Germany, July 2015.
- [38] *Evaluating Servers using Iso-Metrics: Power, Performance and Programmability Implications*. Eighth Workshop on Programmability Issues for Heterogeneous Multicores (**MULTIPROG'15**), Amsterdam, The Netherlands, January 2015.
- [37] *The Challenges and Opportunities of Micro-Servers in the HPC Ecosystem*, 12th Workshop on Clusters, Clouds, and Data for Scientific Computing (**CCDSC'14**) , Chemin de Chanzé, France, October 2014.
- [36] *NVRAM as a User-Level Object Store*. HiPEAC Autumn Computing Systems Week, Athens, Greece, October 2014.
- [35] *On the Viability of Microservers for Real-Time Data Analytics*. HiPEAC Autumn Computing Systems Week, Athens, Greece, October 2014.
- [34] *NanoStreams: A Hardware and Software Stack for Real-Time Analytics on Fast Data Streams*. Horizon 2020 – the HPC Opportunity, London, United Kingdom, March 2014.
- [33] *GEMSCLAIM: Greener Mobile Systems by Cross-Layer Energy Management*. CHIST-ERA 2014 Projects Seminar, Istanbul, Turkey, March 2014.
- [32] *Searching for Data: The Ever-Increasing Role of Memory Hierarchies on the Performance and Sustainability of Computing Systems*. Inaugural Lecture, Queen's University of Belfast, March 2013.
- [31] *Energy as a Resource in Parallel Programs*. Supercomputing'12 Birds-of-a-Feather Session on Cool Supercomputing, November 2012.
- [30] *Block-Level Dynamic Dependence Analysis for Task-Based Parallelism*. Workshop on Perspectives on Parallel Numerical Linear Algebra, Manchester, UK, July 2012.

- [29] *Software Techniques for Energy Conservation in High-End Computing Systems*. Invited Seminar, School of Computer Science, University of Manchester, UK, March 2012.
- [28] *Energy Efficiency at Extreme Scale Tools and Challenges*. Supercomputing'11 Birds-of-a-Feather Session on *Energy-Efficiency*, November 2011.
- [27] *Rearchitecting MapReduce for Heterogeneous Multicore Processors with Explicitly Managed Memories*. School of Electronics, Electrical Engineering and Computer Science, Queen's University of Belfast. October 2010.
- [26] *Determinism in Parallel Software and Architectures*. HiPEAC Systems Week Cluster Meetings, Barcelona, October 2009.
- [25] *Parallelizing Non-trivial Applications with Multiple Programming Models*. HiPEAC Systems Week Cluster Meetings, Barcelona, October 2009.
- [24] *Uniform Evaluation of Programming Models*. HiPEAC Systems Week Cluster Meetings, Paris, November 2008.
- [23] *Unifying Layered Parallelism on the Cell BE*. Supercomputing'07 Birds-of-a-Feather Session on *Unleashing the Power of the Cell Broadband Engine Processor for HPC*, November 2007.
- [22] *Unified Scheduling of Polymorphic Parallelism on Asymmetric Multi-core Systems*. Lawrence Livermore National Laboratory. October 2007.
- [21] *System Software for Scaling on Many Cores*. Oak Ridge National Laboratory. September 2007.
- [20] *Design and Implementation of Time- and Power-Efficient Software Stacks for Multicore Processors*. IBM Thomas J. Watson Research Center. December 2006.
- [19] *Design and Implementation of Time- and Power-Efficient Software Stacks for Multicore Processors*. Department of Computer Science, North Carolina State University. September 2006.
- [18] *Hardware Event-Driven Scalability Predictors: Improving Energy-Efficiency under Hard Performance Constraints on Multi-core and Multi-threaded Architectures*. Department of Electronic and Computer Engineering, Technical University of Crete. June 2006.
- [17] *Addressing the Challenges of Chip Multiprocessors using Autonomic Software*. Department of Computer Science, University of California, Riverside. April 2006.
- [16] *Addressing the Challenges of Chip Multiprocessors using Autonomic Software*. Department of Electrical and Computer Engineering, University of British Columbia. March 2006.
- [15] *High-Performance Power-Efficient Runtime Environments for Dense Computing Systems*/ Department of Computer Science, Virginia Tech. February 2006.
- [14] *High-Performance Power-Efficient Runtime Environments for Dense Computing Systems*. Institute of Computer Science, Foundation for Research and Technology – Hellas. June 2005.
- [13] *High-Performance Power-Efficient Runtime Environments for Dense Computing Systems*. Department of Computer Engineering and Informatics, University of Patras. June 2005.
- [12] *A Unified Programming Framework for Multigrain Multithreaded Architectures*. Institute of Computer Science, Foundation for Research and Technology – Hellas. June 2004.

- [11] *A Unified Programming Framework for Multigrain Multithreading*. School of Electrical and Computer Engineering, National Technical University of Athens. June 2004.
- [10] *A Unified Programming Framework for Multigrain Multithreading*. Department of Computer Science, University of California at Riverside. April 2004.
- [9] *A Unified Programming Framework for Multigrain Parallel Architectures*. Department of Electrical and Computer Engineering, Northwestern University. February 2004.
- [8] *Program Transformations and Scheduling Algorithms for Managing Shared Caches on Multithreaded Processors*. Department of Informatics, Athens University of Economics and Business. June 2003.
- [7] *Program Transformations and Scheduling Algorithms for Managing Shared Caches on SMT Processors*. IBM Thomas J. Watson Research Center. March 2003.
- [6] *Building Adaptive Programs with Local Sensing of Execution Conditions*. Department of Computer Science, Texas A&M University. March 2003.
- [5] *Interoperable System Software*. Department of Information and Computer Sciences, University of California, Irvine. April 2002.
- [4] *Interoperable System Software*. Department of Computer Science, College of William and Mary. March 2002.
- [3] *Scaling Shared-Memory Programming Models beyond Shared-Memory Architectures*. Department of Computer Science, University of Houston. November 2001.
- [2] *Some Steps towards Simple, Scalable and Portable Parallel Programming Models*. Department of Computer Science, College of William & Mary. October 2001.
- [1] *A Case for User-Level Page Migration*. Coordinated Sciences Laboratory, University of Illinois at Urbana-Champaign. January 2001.